

Release Notes for Vehicle Network Toolbox™

How to Contact MathWorks



www.mathworks.com
comp.soft-sys.matlab
www.mathworks.com/contact_TS.html

Web
Newsgroup
Technical Support



suggest@mathworks.com
bugs@mathworks.com
doc@mathworks.com
service@mathworks.com
info@mathworks.com

Product enhancement suggestions
Bug reports
Documentation error reports
Order status, license renewals, passcodes
Sales, pricing, and general information



508-647-7000 (Phone)



508-647-7001 (Fax)



The MathWorks, Inc.
3 Apple Hill Drive
Natick, MA 01760-2098

For contact information about worldwide offices, see the MathWorks Web site.

Release Notes for Vehicle Network Toolbox™

© COPYRIGHT 2009–2012 by The MathWorks, Inc.

The software described in this document is furnished under a license agreement. The software may be used or copied only under the terms of the license agreement. No part of this manual may be photocopied or reproduced in any form without prior written consent from The MathWorks, Inc.

FEDERAL ACQUISITION: This provision applies to all acquisitions of the Program and Documentation by, for, or through the federal government of the United States. By accepting delivery of the Program or Documentation, the government hereby agrees that this software or documentation qualifies as commercial computer software or commercial computer software documentation as such terms are used or defined in FAR 12.212, DFARS Part 227.72, and DFARS 252.227-7014. Accordingly, the terms and conditions of this Agreement and only those rights specified in this Agreement, shall pertain to and govern the use, modification, reproduction, release, performance, display, and disclosure of the Program and Documentation by the federal government (or other entity acquiring for or through the federal government) and shall supersede any conflicting contractual terms or conditions. If this License fails to meet the government's needs or is inconsistent in any respect with federal procurement law, the government agrees to return the Program and Documentation, unused, to The MathWorks, Inc.

Trademarks

MATLAB and Simulink are registered trademarks of The MathWorks, Inc. See www.mathworks.com/trademarks for a list of additional trademarks. Other product or brand names may be trademarks or registered trademarks of their respective holders.

Patents

MathWorks products are protected by one or more U.S. patents. Please see www.mathworks.com/patents for more information.

R2013a

XCP on CAN protocol support	2
MATLAB functions for transmitting and receiving XCP messages	3
Simulink XCP blocks for connecting a model to a CAN bus or ECU	4
XCP MATLAB functions and Simulink blocks for reading and writing dynamic DAQ and STIM lists	5
XCP seed and key support for controlling access to a secured ECU	6
A2L description file support	7

R2012b

Old Message Filtering Functions Removed	10
Support for Vector VN1600 series CAN interface devices ..	11

R2012a

New UserData Property	14
New discard Function	15
Enhanced Sampling Time Field in Vehicle Network Toolbox Simulink Blocks	16
receiveRaw Function No Longer Available	17
New Hardware Support for Kvaser Devices	18

R2011b

New CAN Message Replay and Logging Simulink Blocks	20
New CAN Message Filtering Functions	21

New Platform Support for 64-bit Windows for Vector and Kvaser Devices	22
Support Added for Custom Receive and Transmit Blocks ..	23
Enhanced canMessageImport Function	24

R2011a

New Hardware Support for National Instruments CAN Devices	26
Message Filtering Option in the CAN Tool	27
Deployable Code Generation in the CAN Blocks	28
receiveRaw function Removed	29

R2010b

New canMessageImport Function	32
Enhanced CAN Tool	33
Enhanced CAN Channel for Event-Based Message Transmission	34
Enhanced CAN Channel for Periodic Message Transmission	35
New Hardware Support for Kvaser Devices	36

R2010a

New Hardware Support for Kvaser Devices	38
Enhanced Toolbox and Block Library Performance	39
Removal of the receiveRaw Function	40
New Signals Property for CAN Message Functions	41
New BusLoad Property	42
Enhanced filterSet Function	43
Enhanced replay Function	44

R2009b

New Hardware Support for the Vector Informatik Device	46
--	----

R2009a

CAN Connectivity from MATLAB	48
Vector CAN Database Support	49
CAN Message Encoding and Decoding	50
CAN Message Filtering	51
CAN Message Logging and Replay	52
CAN Block Library	53
CAN Message Traffic GUI	54
MATLAB Compiler Support	55

R2013a

Version: 2.0
New Features: Yes
Bug Fixes: Yes

XCP on CAN protocol support

You can now use XCP over CAN to communicate with your vehicle network.

MATLAB functions for transmitting and receiving XCP messages

You can now use new MATLAB® functions to transmit and receive messages on your vehicle network using XCP.

Simulink XCP blocks for connecting a model to a CAN bus or ECU

You can now use new Simulink® XCP blocks to build a model that communicates with a CAN bus or an ECU.

XCP MATLAB functions and Simulink blocks for reading and writing dynamic DAQ and STIM lists

You can now use new MATLAB functions and Simulink XCP blocks to read data acquisition lists and write data stimulation lists to an XCP channel.

XCP seed and key support for controlling access to a secured ECU

You can now use seed and key security to control access to your ECU using XCP over CAN.

A2L description file support

You can parse an A2L file and also use it to create XCP channels connected to a CAN device.

R2012b

Version: 1.7
New Features: No
Bug Fixes: Yes

Old Message Filtering Functions Removed

Compatibility Considerations: Yes

The following filtering functions have been removed:

- `filterAcceptRange`
- `filterBlockRange`
- `filterReset`
- `filterSet`

Use these new message filtering functions instead:

- `filterAllowAll`
- `filterAllowOnly`
- `filterBlockAll`

Compatibility Considerations

You cannot access any of the old message filtering functions. Replace all instances of the old functions with the new functions.

Support for Vector VN1600 series CAN interface devices

You can now use the VN1600 series devices for CAN communication using the Vehicle Network Toolbox™.

R2012a

Version: 1.6
New Features: Yes
Bug Fixes: Yes

New UserData Property

You can now attach custom information to a CAN channel, message, or database using the new UserData property.

New discard Function

You can now use the `discard` function to clear all available messages on a CAN channel without restarting the channel.

Enhanced Sampling Time Field in Vehicle Network Toolbox Simulink Blocks

You can now use MATLAB variables to represent sampling time in Vehicle Network Toolbox Simulink blocks.

receiveRaw Function No Longer Available

Compatibility Considerations: Yes

You can no longer access `receiveRaw` and `canMessageCompatibilityMode` functions in the MATLAB workspace.

Compatibility Considerations

You cannot access direct signal properties as of R2012a of Vehicle Network Toolbox. Update your code to access physical signal values through the `Signals` property of message objects.

New Hardware Support for Kvaser Devices

New hardware support was added for Kvaser Memorator R SemiPro, USBcan R, and Eagle devices.

R2011b

Version: 1.5
New Features: Yes
Bug Fixes: Yes

New CAN Message Replay and Logging Simulink Blocks

You can now log and replay CAN messages from your Simulink Model using the CAN Log and CAN Replay blocks.

New CAN Message Filtering Functions

Compatibility Considerations: Yes

You can use these functions to filter standard and extended CAN messages:

- `filterAllowAll`
- `filterAllowOnly`
- `filterBlockAll`

Compatibility Considerations

The following message filtering functions will be removed in a future release:

- `filterAcceptRange`
- `filterBlockRange`
- `filterReset`
- `filterSet`

You will see a warning when you use these functions. Use these new filtering functions instead.

New Platform Support for 64-bit Windows for Vector and Kvaser Devices

You can now use Vector and Kvaser CAN devices with Vehicle Network Toolbox on a 64-bit Windows® system.

Support Added for Custom Receive and Transmit Blocks

You can now create your own Receive and Transmit blocks that communicate with unsupported hardware. You can use these custom blocks with the available Vehicle Network Toolbox Simulink blocks.

Enhanced canMessageImport Function

The `canMessageImport` function now import messages faster from Vector and Kvaser log files.

R2011a

Version: 1.4
New Features: Yes
Bug Fixes: Yes

New Hardware Support for National Instruments CAN Devices

Vehicle Network Toolbox supports NI CAN devices. You can use these devices for CAN communication in the toolbox and with CAN blocks in Simulink.

Note For a complete list of supported hardware, visit the Vehicle Network Toolbox product page at the MathWorks Web site www.mathworks.com/products/vehicle-network.

Message Filtering Option in the CAN Tool

You now have the option to filter incoming messages in the CAN Tool and display only the messages you want to see, using message IDs. See “Monitoring CAN Message Traffic” for more information.

Deployable Code Generation in the CAN Blocks

You can now generate code from Simulink blocks in Vehicle Network Toolbox. Models containing the CAN Receive, CAN Transmit, and CAN Configuration blocks run successfully in Accelerator, Rapid Accelerator, External, and Deployed Modes. These blocks also now support using the Simulink Coder™ packNGo function.

receiveRaw function Removed

Compatibility Considerations: Yes

The `receiveRaw` function no longer works in the current release of Vehicle Network Toolbox.

Compatibility Considerations

You cannot access direct signal properties or use the `canMessageCompatibilityMode` function to restore access to direct signal properties starting with the current release of Vehicle Network Toolbox. Update your code to access physical signal values through the `Signals` property of message objects.

R2010b

Version: 1.3
New Features: Yes
Bug Fixes: Yes

New canMessageImport Function

The new `canMessageImport` function allows you to import CAN messages from Vector or Kvaser CAN log files.

Enhanced CAN Tool

The CAN Tool includes many enhancements such as:

- A redesigned, flexible interface
- Ability to decode messages attached to CAN database files

Enhanced CAN Channel for Event-Based Message Transmission

Use the `transmitEvent` function in MATLAB to enable messages for event-based transmission.

Enhanced CAN Channel for Periodic Message Transmission

Use the `transmitPeriodic` function in MATLAB to enable messages for periodic transmit. You can also configure the CAN Transmit block to send messages periodically.

New Hardware Support for Kvaser Devices

Vehicle Network Toolbox supports the following additional Kvaser CAN devices:

- PCIEcan HS/HS
- PCIEcan HS

R2010a

Version: 1.2
New Features: Yes
Bug Fixes: Yes

New Hardware Support for Kvaser Devices

Vehicle Network Toolbox supports Kvaser CAN devices, including these products:

BlackBird	PC104
LAPcan	PC104+
LAPcan II	PCcan
Leaf	PCican
Leaf Light	PCicanx
Leaf Light Rugged	PCican II
Leaf Professional	PCicanx II
Leaf SemiPro	USBcan
Memorator	USBcan II
Memorator II	USBcan Rugged
Memorator Professional	USBcan Professional

You can use these devices with the Vehicle Network Toolboxtm_vehiclenetworktoolbox; and the CAN block library.

For a complete list of devices, see the Supported Hardware page at the MathWorks[®] Web site.

Enhanced Toolbox and Block Library Performance

The toolbox now transmits, receives, and processes messages at a faster rate. The Transmit and Receive blocks transmit and receive messages at a faster rate.

Removal of the receiveRaw Function

Compatibility Considerations: Yes

The `receiveRaw` function will be removed in a future release. In earlier software versions, the `receiveRaw` function expedited receive capability with minimal processing time and maximized message throughput. With enhanced toolbox performance this capability is no longer required. Performance of the standard `receive` function is significantly increased and you can use it to receive all messages.

Compatibility Considerations

The `receiveRaw` function will be removed in a future release. You will see a warning when you use this function. Use the `receive` function instead.

New Signals Property for CAN Message Functions

Compatibility Considerations: Yes

The Signals property displays each physical signal as defined for a CAN message in the CAN database. The Signals property is not applicable if you are not using a CAN database.

Signals displayed by the Signals property replaces access to direct signal property display of CAN messages. It has also increased the toolbox performance and the throughput of the message receive and transmit functions.

Compatibility Considerations

Direct signal properties will no longer appear in a message output. Use the new Signals property to access physical signal values. Update your code if you are using a CAN database and direct signal properties. Refer to the Signals property for more information. It is recommended that you update your code and use the new Signals property because all access to direct signal properties will be removed in a future release. If you cannot update your code at this time, you can use the `canMessageCompatibilityMode` function to restore access to direct signal properties.

New BusLoad Property

The BusLoad property displays the load on the CAN bus associated with the CAN message traffic on Kvaser devices.

Enhanced filterSet Function

The `filterSet` function now automatically calculates and applies the best case filter settings from an array of CAN IDs.

Enhanced replay Function

The `replay` function now replays messages from MATLAB to Simulink with their original timestamps without blocking Simulink operation.

R2009b

Version: 1.1
New Features: Yes
Bug Fixes: Yes

New Hardware Support for the Vector Informatik Device

Additional CAN hardware support is added for the CANcardXLe device.

R2009a

Version: 1.0
New Features: Yes
Bug Fixes: Yes

CAN Connectivity from MATLAB

You connect to a CAN network from the MATLAB interface with R2009a.

Vector CAN Database Support

Version 1.0 of the Vehicle Network Toolboxtm_vehiclenetworktoolbox; supports the Vector CAN database.

CAN Message Encoding and Decoding

You can encode and decode CAN traffic messages with Version 1.0 of the Vehicle Network Toolbox`tm_vehiclenetworktoolbox`;

CAN Message Filtering

Version 1.0 of Vehicle Network Toolbox allows you to filter CAN messages by message ID.

CAN Message Logging and Replay

With Version 1.0 of Vehicle Network Toolbox you can log and replay CAN messages.

CAN Block Library

Version 1.0 of Vehicle Network Toolbox comes with a Simulink CAN block library that you can use to simulate CAN network models.

CAN Message Traffic GUI

Version 1.0 of Vehicle Network Toolbox provides a simple GUI that allows you to monitor CAN message traffic.

MATLAB Compiler Support

Version 1.0 of Vehicle Network Toolbox supports the MATLAB Compiler™. With this capability, you can use the MATLAB Compiler to take MATLAB files as input and generate redistributed, standalone applications that include Vehicle Network Toolbox functionality.