

# **Vehicle Network Toolbox™**

## **Release Notes**

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*Vehicle Network Toolbox™ Release Notes*

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## Summary by Version

This table provides quick access to what's new in each version. For clarification, see Using Release Notes.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
<b>Latest Version V1.6 (R2012a)</b>	Yes Details	Yes Summary	Bug Reports Includes fixes
V1.5 (R2011b)	Yes Details	Yes Summary	Bug Reports Includes fixes
V1.4 (R2011a)	Yes Details	Yes Summary	Bug Reports Includes fixes
V1.3 (R2010b)	Yes Details	No	Bug Reports Includes fixes
V1.2 (R2010a)	Yes Details	Yes Summary	Bug Reports Includes fixes
V1.1 (R2009b)	Yes Details	No	Bug Reports Includes fixes
V1.0 (R2009a)	Yes Details	No	Bug Reports Includes fixes

## Using Release Notes

Use release notes when upgrading to a newer version to learn about:

- New features
- Changes
- Potential impact on your existing files and practices

Review the release notes for other MathWorks® products required for this product (for example, MATLAB® or Simulink®). Determine if enhancements, bugs, or compatibility considerations in other products impact you.

If you are upgrading from a software version other than the most recent one, review the current release notes and all interim versions. For example, when you upgrade from V1.0 to V1.2, review the release notes for V1.1 and V1.2.

## **What Is in the Release Notes**

### **New Features and Changes**

- New functionality
- Changes to existing functionality

### **Version Compatibility Considerations**

When a new feature or change introduces a reported incompatibility between versions, the **Compatibility Considerations** subsection explains the impact.

Compatibility issues reported after the product release appear under Bug Reports at the MathWorks Web site. Bug fixes can sometimes result in incompatibilities, so review the fixed bugs in Bug Reports for any compatibility impact.

### **Fixed Bugs and Known Problems**

MathWorks offers a user-searchable Bug Reports database so you can view Bug Reports. The development team updates this database at release time and as more information becomes available. Bug Reports include provisions for any known workarounds or file replacements. Information is available for bugs existing in or fixed in Release 14SP2 or later. Information is not available for all bugs in earlier releases.

Access Bug Reports using your MathWorks Account.

## **Documentation on the MathWorks Web Site**

Related documentation is available on [mathworks.com](http://mathworks.com) for the latest release and for previous releases:

- Latest product documentation

- Archived documentation

## Version 1.6 (R2012a) Vehicle Network Toolbox Software

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	Yes. Details labeled as <b>Compatibility Considerations</b> , below. See also Summary.	Bug Reports Includes fixes

New features and changes introduced in this version are:

- “New UserData Property” on page 4
- “New discard Function” on page 4
- “Enhanced Sampling Time Field in Vehicle Network Toolbox Simulink Blocks” on page 4
- “receiveRaw Function No Longer Available” on page 5
- “New Hardware Support for Kvaser Devices” on page 5

### 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**

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.

## Version 1.5 (R2011b) Vehicle Network Toolbox Software

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	Yes. Details labeled as <b>Compatibility Considerations</b> , below. See also Summary.	Bug Reports Includes fixes

New features and changes introduced in this version are:

- “New CAN Message Replay and Logging Simulink Blocks” on page 6
- “New CAN Message Filtering Functions” on page 6
- “New Platform Support for 64-bit Windows for Vector and Kvaser Devices” on page 7
- “Support Added for Custom Receive and Transmit Blocks” on page 7
- “Enhanced canMessageImport Function ” on page 7

### 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

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.

## Version 1.4 (R2011a) Vehicle Network Toolbox Software

This table summarizes what is new in Version 1.4 (R2011a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	Yes. Details labeled as <b>Compatibility Considerations</b> , below. See also Summary.	Bug Reports Includes fixes

New features and changes introduced in this version are:

- “New Hardware Support for National Instruments CAN Devices” on page 8
- “Message Filtering Option in the CAN Tool” on page 8
- “Deployable Code Generation in the CAN Blocks” on page 9
- “receiveRaw function Removed” on page 9

### 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.

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**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](http://www.mathworks.com/products/vehicle-network).

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### 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**

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.

## Version 1.3 (R2010b) Vehicle Network Toolbox Software

This table summarizes what is new in Version 1.3 (R2010b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports Includes fixes

New features and changes introduced in this version are:

- “New canMessageImport Function” on page 10
- “Enhanced CAN Tool” on page 10
- “Enhanced CAN Channel for Event-Based Message Transmission” on page 10
- “Enhanced CAN Channel for Periodic Message Transmission” on page 11
- “New Hardware Support for Kvaser Devices” on page 11

### 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

## Version 1.2 (R2010a) Vehicle Network Toolbox Software

This table summarizes what is new in Version 1.2 (R2010a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	Yes. Details labeled as <b>Compatibility Considerations</b> , below. See also Summary.	Bug Reports Includes fixes

New features and changes introduced in this version are:

- “New Hardware Support for Kvaser Devices” on page 12
- “Enhanced Toolbox and Block Library Performance” on page 13
- “Removal of the receiveRaw Function” on page 13
- “New Signals Property for CAN Message Functions” on page 13
- “New BusLoad Property” on page 14
- “Enhanced filterSet Function” on page 14
- “Enhanced replay Function” on page 14

### 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 Toolbox™\_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

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

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.

## Version 1.1 (R2009b) Vehicle Network Toolbox Software

This table summarizes what's new in Version 1.1 (R2009b):

<b>New Features and Changes</b>	<b>Version Compatibility Considerations</b>	<b>Fixed Bugs and Known Problems</b>
Yes Details below	No	Bug Reports Includes fixes

### **New Hardware Support for the Vector Informatik Device**

Additional CAN hardware support is added for the CANcardXLe device.

## Version 1.0 (R2009a) Vehicle Network Toolbox Software

This table summarizes what's new in Version 1.0 (R2009a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports Includes fixes

Version 1.0 of the Vehicle Network Toolbox software includes the following features:

- “CAN Connectivity from MATLAB” on page 16
- “Vector CAN Database Support” on page 16
- “CAN Message Encoding and Decoding” on page 16
- “CAN Message Filtering” on page 17
- “CAN Message Logging and Replay” on page 17
- “CAN Block Library” on page 17
- “CAN Message Traffic GUI” on page 17
- “MATLAB Compiler Support” on page 17

### 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 Toolbox`tm_vehicle_network_toolbox`; 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_vehicle_network_toolbox`;

## **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.

## Compatibility Summary for Vehicle Network Toolbox Software

This table summarizes new features and changes that might cause incompatibilities when you upgrade from an earlier version, or when you use files on multiple versions. Details are provided in the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
Latest Version V1.6 (R2012a)	See the <b>Compatibility Considerations</b> subheading for this change: <ul style="list-style-type: none"> <li>• “receiveRaw Function No Longer Available” on page 5</li> </ul>
V1.5 (R2011b)	See the <b>Compatibility Considerations</b> subheading for this change: <ul style="list-style-type: none"> <li>• “New CAN Message Filtering Functions” on page 6</li> </ul>
V1.4 (R2011a)	See the <b>Compatibility Considerations</b> subheading for this change: <ul style="list-style-type: none"> <li>• “receiveRaw function Removed” on page 9.</li> </ul>
V1.3 (R2010b)	None
V1.2 (R2010a)	See the <b>Compatibility Considerations</b> subheading for these changes: <ul style="list-style-type: none"> <li>• “Removal of the receiveRaw Function” on page 13</li> <li>• “New Signals Property for CAN Message Functions” on page 13</li> </ul>
V1.1 (R2009b)	None
V1.0 (R2009a)	None