



**Test Program**

**CANloop**

**Documentation**

Vector Informatik GmbH, Ingersheimer Str. 24, 70499 Stuttgart  
Tel.: ++49 711 80670-0, Fax ++49 0711 80670-111  
Email [can@vector-informatik.de](mailto:can@vector-informatik.de)  
Internet <http://www.vector-informatik.de>

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# 1 Introduction

CANloop is a simple tool to test various types of CAN hardware and to help understanding the basics of a CAN network. With this application you can simply test your hardware and software. Additionally you can use it for controlling or monitoring incoming and outgoing messages on the CAN bus.

## 2 Compatibility

Note that in versions of vcnrvms.dll older than 3.0 filter range capabilities for acceptance filtering are not supported.

CANloop is compatible with MS Windows 95, MS Windows 98 (incl. SE), MS Windows ME, MS Windows 2000, MS Windows NT 4.0 and later.

## 3 Program description

### 3.1 Overview

On the start CANloop opens two CAN ports (next as “port” only) for measurement. On the CANloop layout you can see these ports on the left and on the right side (in the following named as “Port 1” and “Port 2”).

### 3.2 Selecting and Configuring a Port

#### 3.2.1 Selecting a Channel

For each port you can use any of the available hardware channels as well as virtual channels. A list of available channels is in the list box under the port name. Select “All channels” to control all available CAN channels. Channel configuration can be done only if CANloop is in stopped state. Otherwise this feature is disabled.

#### 3.2.2 Configuring the Baudrate

If you have Init Access for the selected channel (The first application going on bus has Init Access.), you can specify the baud rate. This can be done by the “Baudrate” list box. If some other application is using the selected channel, the already configured speed is used. Baud rate configuration can be done only if CANloop is in stopped state. Otherwise this feature is disabled.

Note: You must select the same baud rate as the other CAN devices on this bus.

### 3.2.3 Configuring the ID Acceptance

In the “Acceptance Filter” filter box you can configure the acceptance filtering for incoming messages; this can be done separately for each port. By default, all messages are accepted. By pressing the “Reset” button you will clear the filter and no message will be accepted. The “Add” button can be used to add a new range of values. Enter the first and the last message identifier<sup>1</sup> (ID) to be accepted by the respective port and press the “Add” button. New values will expand the old ones, e.g. if you first select a range from ID 10 to ID 20 and later on a range from ID 15 to ID 35, the final range will be from ID 10 to ID 35. The selected filters are in list box on the right of the typing fields. Acceptance filter configuration can be done only if CANloop is in started state, otherwise the buttons are disabled.

Note: Acceptance filtering by CANloop does not affect extended ID messages, which are still accepted.

### 3.2.4 Sending Messages with Extended ID

By selecting the box “Ext. ID” all outgoing messages will have Extended ID format. More information can be found on CAN hardware documentation.

Note: All messages with extended ID are accepted, because they are not affected by acceptance filtering.

## 3.3 Sending Messages, Checking CAN Bus Events and Controlling the Display

### 3.3.1 Sending messages

By pressing the “Send” button you will send message on the selected channel to the CAN bus. ID<sup>1</sup>, DLC and data configuration can be done by editing the described fields in the “Message” group. If you have selected the “Ext. ID” field, the message will be sent in Extended ID format.

### 3.3.2 Cycle Sending of Messages

By selecting the “Cycle” field, CANloop will send the selected message in an endless loop.

### 3.3.3 Viewing the Events on the CAN Port / Bus

On the selected CAN port you can view events on the CAN bus. All events of the selected port are printed to the screen.

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<sup>1</sup> The values can be from various base types: If the first character is a '0' and the second character is not a 'x' or 'X', the value is interpreted as an octal integer. If the first character is '0' and the second character is 'x' or 'X', the string is interpreted as a hexadecimal integer. If the first character is '1' through '9', the string is interpreted as a decimal integer. The letters 'a' through 'z' (or 'A' through 'Z') are assigned the values 10 through 35; only letters whose assigned values are less than *base* are permitted.

### 3.3.4 Controlling the Screen

By pressing the “Clear” button you will clear the screen. Select the “Scroll” field to enable auto scrolling of the screen.

## 3.4 Other CANloop Controls

### 3.4.1 “CAN HARDWARE” button

By pressing this button you can open the CAN Hardware Configuration - which is located in the Control Panel (Start\Settings\Control Panel), too.

### 3.4.2 “START/STOP” button

By pressing the “Start” button you can start (going on bus, connect to the CAN bus) and by pressing the “Stop” button you can stop (going bus off, disconnect from the CAN bus) the current port configuration.

### 3.4.3 “Automatic Test“ button

This button starts a procedure to find a dual channel CAN hardware and test some basic functionality (setting the baudrate, setting the acceptance filtering, using the timer, sending and receiving messages and other overall settings). You must have a loop cable between these channels or have both channels connected to the same CAN bus. Depending on the CAN protocol (Highspeed or Lowspeed) you have to use termination resistors or not. When the automatic test is finished, its results are displayed on the screen.

### 3.4.4 “Finish“ button

Press “Finish” button to exit CANloop

## 4 Troubleshooting

**Q: I can't start CANloop.**

**A:** Make sure that any Vector® CAN Hardware is correctly installed and configured. This can be done by the CAN Hardware Configuration, located in the Windows Control Panel (Start/Settings/Control Panel). Refer to the respective Installation Guide of your Vector CAN Hardware.

**Q: The Acceptance Filtering controls are disabled.**

**A1:** Make sure that you are in the started state. If not, press the CANloop "Start" button.

**A2:** If you are using an old driver version, update to the latest version. You can get the latest driver from the Vector Internet site (<http://www.vector-informatik.com>, section Support).

**Q: I can't choose another CAN channel.**

**A:** You must be in stopped state to switch the channel. Please press the "Stop" button on the bottom of CANloop window.

**Q: I can't send a message or cyclic messages.**

**A:** Sending messages is possible only when you are in started state. Please press the "Start" button on the bottom of CANloop window.

**Q: When I am trying to send a message I got error events and CAN bus goes to OFF state. What's the problem?**

**A:** It is possible that you have some problem on the CAN bus, check all cables and try again.

**A2:** Make sure that you have selected the correct baud rate. You must have the same baud rate as the other CAN devices on the CAN bus.

**Q: I would like to see on my second port screen what I send on my first port. How can I do that?**

**A:** Follow this procedure: Select on the both ports the same baud rate. Choose for both ports channels that are on the same CAN bus. Be sure that you have a corresponding acceptance filtering configured.

**Q: Where can I get support on driver problems?**

**A:** You can contact the Vector Support Team by email ([support@vector-informatik.de](mailto:support@vector-informatik.de)) or by phone (+49 711 80670-200).