Manual

Installation Instructions

Version 2.6 English



Imprint

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1 Introduction

In this chapter you find the following information:

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1.1 About this User Manual

1.1.1 Access Help and Conventions

To find information The u quickly $\rightarrow \Delta$

The user manual provides you the following access help:

- → At the beginning of each chapter you will find a summary of the contents,
- → In the header you can see in which chapter and paragraph you are ((situated)).

Conventions In the two following charts you will find the conventions used in the user manual regarding utilized spellings and symbols.

Style	Utilization		
bold	Blocks, surface elements, window- and dialog names of the software. Accentuation of warnings and advices.		
	[OK] Push buttons in brackets		
	File Save Notation for menus and menu entries		
Windows	Legally protected proper names and side notes.		
Source code	File name and source code.		
Hyperlink	Hyperlinks and references.		
<strg>+<s></s></strg>	Notation for shortcuts.		

Symbol	Utilization
Δ	This symbol calls your attention to warnings.
i	Here you can find additional information.
	Here is an example that has been prepared for you.
	Step-by-step instructions provide assistance at these points.
	Instructions on editing files are found at these points.
	This symbol warns you not to edit the specified file.

1.1.2 Certification

Certified Quality Vector Informatik GmbH has ISO 9001:2008 certification. The ISO standard is a globally recognized standard.

1.1.3 Warranty

Restriction of We reserve the right to change the contents of the documentation and the software without notice. Vector Informatik GmbH assumes no liability for correct contents or damages which are resulted from the usage of the user manual. We are grateful for references to mistakes or for suggestions for improvement to be able to offer you even more efficient products in the future.

1.1.4 Support

You need support? You can get through to our support at the phone number +49 711 80670-200 or by fax +49 711 80670-111 E-Mail: support@vector.com

1.1.5 Registered Trademarks

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> → Windows, Windows XP, Windows Vista, Windows 7 are trademarks of the Microsoft Corporation.

2 Notes

In this chapter you find the following information:

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2.2	Driver Setup	page	9
2.3	Vector Hardware Configuration	page 1	11
2.4	Further Notes	page 1	13
	Measurement Applications		
	Device Manager		
	Power Manager		

Minimum Requirements 2.1

Hardware		CPU	Pentium 4 or higher	
		Memory	512 MB or more	
		Interfaces	CANcardXL CANcardXLe CANboardXL PCI CANboardXL PCIe CANboardXL PXI CANcaseXL CANcaseXL log VN2610 VN3300 VN3600 VN3600 VN7600 VN8910	: PCMCIA : ExpressCard 54 : PCI : PCI Express 1x : Compact PCI/PXI : USB : USB : USB : PCI : USB : USB : USB : USB
Software		Operating system	Windows XP SP3 Windows Vista SP1 Windows 7	
		Driver version	7.x	
	i	Info: In Windows Vis	sta and Windows 7 it is i	strator Rights for the following steps.

please copy the files to your local hard drive.

2.2 Driver Setup

General information

The Vector Driver Disk V7.3 or higher offers a new driver setup which allows the installation or the removal of Vector device drivers:



 Execute Driver Setup from the autostart menu or directly from \Drivers\32_Bit\setup.exe (for Windows 7, Vista and XP 32 bit) and \Drivers\64_Bit\setup.exe (for Windows 7 64 bit) respectively.



Note: A list of supported operating systems can be found in: \Documentation\Important_Notes.pdf

Vector Informatik GmbH Driver Setup - Version 1.8.30		
vector		
	Welcome to Vector Driver Setup!	
	This program will install Vector Drivers on your computer.	
	Click 'Next' to continue with the setup program. Please close all open applications before proceeding!	
	Next > Cancel	

2. Click **[Next]** in the driver setup dialog. The initialization process starts.

3. In the driver selection dialog select your devices to be installed (or to be uninstalled). Also ensure that those devices are connected with the PC. Otherwise the drivers are only pre-installed by the Vector Driver Setup.

Vector Informatik GmbH Driver Setup - Version 1.8.30				
Driver Selection Select the device to be installed/uninsta	alled.	vector		
		he device is currently not connected, choose the device has been connected to the PC.		
Device	Installed driver	Driver in installation packet		
XL Interface Family				
CANcardXL CANcardXLe CANcaseXL / CANcaseXL log	- not installed - 7.5.14 7.3.18	7.3.36 7.5.14 7.3.18		
CANboardXL / PCle / PXI	6.9.24	7.3.18		
FlexRay Interface Family				
 □ VN3300 □ VN3600 / VN7600 	- not installed - - not installed -			
MOST Interface Family				
VN2600 / VN2610	- not installed -	7.3.34		
VN8900 Interface Family				
VN8910	- not installed -	7.4.44		
Miscellaneous				
USB Dongle	5.41.7436	5.75.13018		
Select/deselect all devices Remove all driver components				
		Uninstall Install Cancel		

- 4. Click **[Install]** to execute the driver installation, or **[Uninstall]** to remove existing drivers.
- 5. A confirmation dialog appears. Click [Close] to exit.



Info: It is also possible to pre-install the drivers if the hardware is currently not connected. In this case the installation of the driver has to be completed with the **Windows found new Hardware** wizard after connecting the device. Use the option for automatic driver search then.

2.3 Vector Hardware Configuration

Executing Vector Hardware Config	After successful installation you will find the configuration application Vector Hardware in the Control Panel. The tool gives you information about the connected and installed Vector devices. There are also several settings that can be changed.		
Windows XP	→ Category view Start (Settings) Control Panel, of Control Panel options followed by V		f the window for further
	 Classic view Start (Settings) Control Panel, et al. 	click Vector Hardwa	ire in the list.
Windows Vista	 Category view Start (Settings) Control Panel, of Additional Options followed by Vect 		of the window for
	 Classic view Start (Settings) Control Panel, or 	click Vector Hardwa	ire in the list.
Windows 7	 Category view Start Control Panel Hardware a 	nd Sound, click Veo	ctor Hardware in the list.
	 Symbols view Start Control Panel, click Vector 	Hardware in the list	
	Vector Hardware Config File Edit Tools Window Help		
	E Se Hardware	Detaile	
	□ 📲 Hardware	Details	
	🗐 🔄 Virtual CAN-Bus 1	Device	CANcardXLe 1 (000164)
		Device Type	CANcardXLe 1 (000164) ExpressCard
	Virtual CAN-Bus 1 G CANcaseXL log 1 (005169) G S CANboardXL 1 (000866) CANboardXL 1 (000164)	Device Type Serial number	CAllcardXLe 1 (000164) ExpressCard 164
	Virtual CAN-Bus 1 GANcaseXL log 1 (005169) GANcaseXL 1 (000866) GANcardXL 1 (000164) STWINcab CAN 1041Amag (Highspeed)	Device Type Serial number Driver version	CAllcardXLe 1 (000164) ExpressCard 164 6.9.37
	 Virtual CAN-Bus 1 CANcaseXL log 1 (005169) CANboardXL 1 (000866) CANcardXLe 1 (000164) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) 	Device Type Serial number	CAllcardXLe 1 (000164) ExpressCard 164
	Virtual CAN-Bus 1 CANcaseXL log 1 (005169) CANcaseXL 1 (000866) CANcardXL 1 (000164) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed)	Device Type Serial number Driver version Firmware version Capabilities	CAllcardXLe 1 (000164) ExpressCard 164 6.9.37 6.9.34 CAN, LIN, HWSYNC, D/A IO, J17 NO
	Virtual CAN-Bus 1 CANcaseXL log 1 (005169) CANcardXL 1 (000866) CANcardXL 1 (000164) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) CAN 1041Amag (Highspeed)	Device Type Serial number Driver version Firmware version Capabilities Multiple device mode Operation mode	CAllcardXLe 1 (000164) ExpressCard 164 6.9.37 6.9.34 CAN, LIN, HWSYNC, D/A IO, J17 NO 4 CAN
	Virtual CAN-Bus 1 CANcaseXL log 1 (005169) CANcardXL 1 (000866) CANcardXL 1 (000164) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) CAN 1041Amag (Highs	Device Type Serial number Driver version Firmware version Capabilities	CAlicardXLe 1 (000164) ExpressCard 164 6.9.37 6.9.34 CAN, LIN, HWSYNC, D/A IO, J17 NO 4 CAN Ch1: CAN
	Virtual CAN-Bus 1 CANcaseXL log 1 (005169) CANcardXL 1 (000866) CANcardXL 1 (000164) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) CAN 1041Amag (Highs	 Device Type Serial number Driver version Firmware version Capabilities Multiple device mode Operation mode Connector 1: 	CAlicardXLe 1 (000164) ExpressCard 164 6.9.37 6.9.34 CAN, LIN, HWSYNC, D/A IO, J17 NO 4 CAN Ch1: CAN Ch1: CAN Ch3: CAN
	Virtual CAN-Bus 1 CANcaseXL log 1 (005169) CANcardXL 1 (000866) CANcardXL 1 (000164) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) CAN 1041Amag (Highs	Device Type Serial number Driver version Firmware version Capabilities Multiple device mode Operation mode	CAlicardXLe 1 (000164) ExpressCard 164 6.9.37 6.9.34 CAN, LIN, HWSYNC, D/A IO, J17 NO 4 CAN Ch1: CAN Ch1: CAN Ch3: CAN Ch2: CAN
	Virtual CAN-Bus 1 CANcaseXL log 1 (005169) CANcardXL 1 (000866) CANcardXL 1 (000164) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) TWINcab CAN 1041Amag (Highspeed) CAN 1041Amag (Highs	 Device Type Serial number Driver version Firmware version Capabilities Multiple device mode Operation mode Connector 1: 	CAlicardXLe 1 (000164) ExpressCard 164 6.9.37 6.9.34 CAN, LIN, HWSYNC, D/A IO, J17 NO 4 CAN Ch1: CAN Ch1: CAN Ch3: CAN

The tool is split into two windows. The left window lets you access the installed Vector devices, the right window displays the details of the selection. The following nodes are available in the left window:

Hardware Each installed Vector device is shown in **Hardware**. Additional details of available channels are shown in a tree view. Status information on the device components and channels are also shown in this dialog.

vector Hardware change detected.

Application	In Application all available applications are shown with their configured channels. If you click on an application, all of its channels are displayed in the right pane on the screen.
General information	The General information section contains general information on Vector devices and applications.
License	Information on all currently valid licenses is displayed in License . You can look there to see which tools and applications are currently licensed.
	Note: You will find a detailed description of Vector Hardware Config in the online help (Help Contents).

2.4 Further Notes

2.4.1 Measurement Applications

Compatible software The device can be run with several applications from Vector (e.g. CANape, CANoe) or with measurement applications from other companies. Therefore the device must have a related license. A license for applications based on the XL Driver Library is not required.

2.4.2 Device Manager

Windows XP	→ Category view Start (Settings) Control Panel Performance and Maintenance System Hardware Device Manager
	 Classic view Start (Settings) Control Panel System Hardware Device Manager
Windows Vista	 Category view Start (Settings) Control Panel Performance and Maintenance System Device Manager
	 Classic view Start (Settings) Control Panel System Hardware Device Manager
Windows 7	Category view Start Control Pane System and Security Device Manager
	→ Symbols view Start Control Device Manager

2.4.3 Power Manager

Timing requirements Many desktop PCs have power managers which block the CPU for a specific time. This impairs accuracy of the time system. If your application has stringent timing requirements (e.g. time-driven sending of messages or time-driven evaluations), you must deactivate these power managers.

Power management settings may be contained:

- in the BIOS setup,
- → on the Control Panel of Windows XP / Vista / Windows 7 (e.g. Power options).

No further mention will be made of the power manager in this document.

3 Operating Test and Troubleshooting

In this chapter you find the following information:

3.1	Loop Test CAN	page 16
	FlexRay MOST	
3.2	Checking Installation	page 21
3.3	Correction of Driver Installation	page 21

3.1 Loop Test

Operating test The test described here can be performed to check the functional integrity of drivers and hardware. This test is identical for Windows XP, Windows Vista, Windows 7 and independent of the application being used.

3.1.1 CAN

Device test

The operating test for CAN can be executed with the following devices:

- CANcardXL
- CANcardXLe
- CANcaseXL
- → CANcaseXL log
- CANboardXL Family
- → VN7600

Loop3.exe

Either two High-Speed or two Low-Speed transceivers are necessary for this functional test:



- 1. Connect both channels with a suitable cable. If two High-Speed transceivers are being used, we recommend our CANcable 1, and CANcable 0 for Low-Speed transceivers.
- 2. Start \Drivers\...\CommonFiles\Loop3.exe from the driver CD. This program accesses the hardware and transmits CAN messages.
- 3. Select Channel 1 and Channel 2 (Selected channels) of the hardware to be tested.
- 4. Set the appropriate baudrate (Settings) depending on the transceiver being used (High-Speed max. 1,000,000 Bd, Low-Speed max. 125,000 Bd).
- 5. Click [Start].

📩 Loop3 - CAN Benchmark utility			×
Selected channels 1st CANboardXL Channel 2 1st CANcaseXL log Channel 1 1st CANcaseXL log Channel 2 1st Virtual Channel 1 1st Virtual Channel 2	Settings Req. statistics Stress priority Write logs Timer events 1.000.000 Bd Random IDs	Time limit [s] O Burst size 16 Save statistic Dump events Clear	

6. Once the system has been configured properly, you will see in the lower window of the test software statistical data about the hardware being used.

Selected channels 1st CANboardXL Channel 2 1st CANcaseXL log Channel 1 1st CANcaseXL log Channel 2 1st Virtual Channel 1 1st Virtual Channel 2	Settings Req. statistics Stress priority Write logs I.000.000 Bd Random IDs Random IDs	Time limit [s] 0 Burst size 16 Save statistic Dump events Clear
Channel2 = 0x4 Channel3 = 0x8 Setting bit rate to 1000000 bit/s, t1= btr0=00.btr1=14 FwVersion=06090018, HwVersion= FwVersion=06090018, HwVersion= Setting timer rate to 1 Started at Thu Oct 29 13:16:39 200	02000000, SerialNumber=10486 02000000, SerialNumber=10486	
02 Delay[ns]: AvRcv=232282 Av= 03 Delay[ns]: AvRcv=249419 Av=	-9575 Stats=60/54 Msg=92080/193763 I/O=9626/202 1113, Min=0, Max=10000, Global [Av=1046, Min=0, Max 1124, Min=0, Max=10000, Global [Av=1195, Min=0, Max 120, Min=0, Max=10000, Average ClkDiff=-2899.72us, B	x=10000, Last=0] x=10000, Last=0]

7. The test procedure is terminated by **[Stop]**. After a successful test an **OK** message is printed in the upper text window.

Loop3 Application

🔁 Loop3 - CAN Benchmark utility				
Selected channels 1st CANboardXL Channel 2 1st CANcaseXL log Channel 1 1st CANcaseXL log Channel 2 1st Virtual Channel 1 1st Virtual Channel 2	Settings Req. statistics Stress priority Write logs Timer events 1.000.000 Bd Random IDs	Time limit [s] 0 Burst size 16 Save statistic Dump events	Exit	
btr0=00,btr1=14 FwVersion=06090018, HwVersion=02000000, SerialNumber=10486 FwVersion=06090018, HwVersion=02000000, SerialNumber=10486				
Setting timer rate to 1 Started at Thu Oct 29 13:16:39 2009				
Test finished with result: Image: Construction of the second se				
0:00:41.068 ClkDiff=-2.497ms Tim=39380 Stats=240/234 Msg=380611/800780 I/0=9641/20280msg/s 02 Delay[ns]: AvRcv=208384 Av=1128, Min=0, Max=10000, Global [Av=1048, Min=0, Max=10000, Last=0] 03 Delay[ns]: AvRcv=223805 Av=1125, Min=0, Max=10000, Global [Av=1211, Min=0, Max=10000, Last=0] Total global delays[ns]: Average=1129, Min=0, Max=10000, Average ClkDiff=-2922.82us, BusLoad=94.69%				



Note: If the functional test could not be performed successfully (**FAILED** error message in the upper window of the test software), please refer to section Checking Installation on page 21.

3.1.2 FlexRay

Device test

The operating test for FlexRay can be executed with the following devices:

- → VN3300
- → VN3600
- → VN7600

FRLoop.exe

This operating test requires a FlexRay Interface with an FRpiggy, which is plugged to the PC and installed. Remove the FlexRay cable if plugged.



- 1. Start Drivers...CommonFilesFRLoop.exe from the driver CD.
- 2. Execute the test.
- 3. If no error messages occur, the operating test was successful.

🔁 FRLoop	
VN3x00 FlexRay Interface	Channel Selection CANboardXL PCIe Channel 1 CANcardXL PCIe Channel 2 CANcardXL Channel 1 CANcardXL Channel 1 Virtual Channel 1 Virtual Channel 1 Virtual Channel 1 Virtual Channel 1
 Net config accepted by driver Activate channel command Node switched to normal Rx sync frame received TxAck of sync frame received TxAck of cyclic frame received TxAck of singleshot frame received Doing data consistency checks Deactivate channel command Test completed successfully 	Create Log file Hardware Information FPGA: 4.05.112 HW-Type: VN3600 Channel 1 Firmware: 7.02.29 Bootcode: 2.00.10 Hardware: 0x3000000 Serialnumber: 81 Driver Version: 7.02.29 CapChannel: Index 4, FRpiggy 1080 CapChannel01: CapChannel02:
FlexRay	Measurement



Note: If the functional test could not be performed successfully, please refer to section Checking Installation on page 21.

3.1.3 MOST

Device test

The operating test for MOST can be executed with the following device:

→ VN2610

MLoop.exe



For this functional test a MOST fiber optic cable and a fiber coupler for HFBR connectors is required.

- 1. Start \Drivers\...\CommonFiles\MLoop.exe from the driver CD. This program accesses the hardware and switches the VN2610 to **Master** mode (deactivated bypass).
- 2. Select the VN2610 to be tested from the list of detected devices.
- Click [Twinkle] and check if the power LED of VN2610 is blinking at least 1 second.
- Connect the MOST fiber optic cable with the VN2610 device, select Master mode and check if the program displays status Unlock. Check if red light comes out of the Tx fiber of the MOST fiber optic cable.
- 5. Connect both ends of the fiber with one fiber coupler to a ring and check if the program displays status **Lock**.
- 6. Exit MLoop.exe with [Exit].



Note: If the functional test could not be performed successfully, please refer to section Checking Installation on page 21.

3.2 Checking Installation



To perform the following test steps, the device must be inserted in the PC or connected.

- → Open the Device Manager.
- → Check to see whether the device is shown in the group Vector-Hardware. If this device is not listed, the device driver is not or improperly installed. In this case open the Other Components item that is marked with a yellow ? in the Device Manager.
- ➔ If you find an entry for Vector <device> here, the driver is improperly installed. Correct the driver installation as described in section 3.3.
- ➔ If you do not find the entries for the device, the device driver has not been installed yet.

3.3 Correction of Driver Installation



→ If the driver is improperly installed, the entry Vector <device> appears in Other Components of the Device Manager. To solve this problem, connect the device with the PC and restart the Vector Driver Setup.

4 Appendix A: Addresses

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