



Revision List

What's New

netIC DVD

2012-01-1

Hilscher Gesellschaft für Systemautomation mbH

www.hilscher.com

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1 Introduction

1.1 About this Document

This manual describes the major changes from netIC DVD for

- hardware
- firmware
- tools and
- documentation.

See chapter *What's New – netIC DVD 2012-01-1* from page 7 for the latest netIC DVD.

1.2 List of Revisions

Rev	Date	Name	Chapter	Revision
1	2012-01-25	HH	all	Created for netIC DVD 2012-01-1

Table 1: List of Revisions

2 What's New – netIC DVD 2010-08-2

2.1 Hardware

The following netIC communication module was added to the netIC product line:

Module	Hardware Revision	Firmware
NIC 50-RE	4	All Real-Time Ethernet
NIC 50-REFO	2	PROFINET IO Device

Table 2: netIC Gateway Modules

NIC 50-RE revision 3 and 4 has a hardware change to support the Fast StartUp feature of PROFINET IO Device. For more details, see section *PROFINET IO Device with Fast Startup* on page 5.

2.2 Firmware

The following list compares the firmware versions on the netIC DVD

Protocol	File name	Version on netIC DVD 2009-09-2	Version on netIC DVD 2010-08-2
CANopen Slave	nicmbcos.nxf	1.2.8.0	1.3.12.0
CC-Link Slave	nicmbccs.nxf	1.2.8.0	1.3.12.0
CompoNet Slave	nicmbcps.nxf	1.2.8.0	1.3.12.0
DeviceNet Slave	nicmbdns.nxf	1.2.8.0	1.3.12.0
EtherCAT Slave	nicmbeccs.nxf	1.2.8.0	1.3.12.0
EtherNet/IP Adapter/Slave	nicmbeis.nxf	1.2.8.0	1.3.12.0
Open Modbus/TCP	nicmbomb.nxf	1.2.8.0	1.3.12.0
POWERLINK Controlled Node	nicmbpls.nxf	1.2.8.0	1.3.12.0
PROFIBUS DP Slave	nicmbdps.nxf	1.2.8.0	1.3.12.0
PROFINET IO Device	nicmbpns.nxf	1.2.8.0	1.3.12.0
PROFINET IO Device Fiber Optic	nicpnsfo.nxf	-	1.3.12.0
SERCOS III Slave	nicmbs3s.nxf	-	1.3.12.0

Table 3: Firmware Versions on netIC DVD

2.2.1 New Firmware Features

The following new functions were added to the firmware:

- SPI Interface
- Watchdog function
- Configuration Mode and Push Button T3

For a description see next pages.

Note: Firmware version 1.1.x.x does not run on hardware revision 3 and 4 of the NIC 50-RE device. Use Firmware version 1.2.x.x or higher for hardware revision 3 and 4 of the NIC 50-RE device.

2.2.1.1 SPI Interface

A SPI Interface was added to the netIC Firmware. The netIC works as SPI slave. The netIC only supports the SPI Mode 3 e. g. Polarity CPOL = 1 and Phase CPHA 1.

Note: If the SPI Mode is activated, the integrated Serial Shift IO Interface (SSIO) of the netIC (Pins 3 to 7) is supported only with update frequencies of up to approximately 500 Hz. This update frequency is not sufficient for fast digital I/O applications. Therefore it is not possible to operate SPI and fast digital I/O applications simultaneously at the netIC. However, after deactivation of the SPI Mode, the integrated Serial Shift IO Interface will be available with full performance.

2.2.1.2 Watchdog Function

A watchdog functionality was added and can be used, if the netIC is used as a Modbus RTU slave. The Modbus RTU master has to send telegrams to the netIC within the watchdog time. The watchdog time can be by the netX configuration tool.

If the netIC is not addressed in the defined watchdog time, the fieldbus interface and the synchronous serial interface (SSIO) will automatically caused to be brought into a secure state. In this context secured state means cleared outputs for the synchronous serial interface.

2.2.1.3 Configuration Mode and Push Button T3

It is not longer necessary to activate the diagnostic mode by pushing button T3. This means, the button T3 is not serviced in firmware version 1.3.x.x and therefore cannot be used for switching between configuration mode and standard mode. The configuration mode is automatically activated and deactivated after 10 seconds.

2.2.2 PROFINET IO Device with Fast Startup

The PROFINET IO Device firmware V1.2.x.x (and higher) for NIC 50-RE hardware revision 3 and 4, contains a new protocol stack implementation compared to the old firmware version 1.1.x.x. Firmware version 1.2.x.x (and higher) supports the FSU (Fast Start-Up) feature.

Note: Only use the GSDML file GSDML-V2.2-HILSCHER-NIC 50-RE PNS-20090821.xml when working with version 1.2.x.x of the PROFINET IO firmware for the NIC 50-RE. The former firmware version 1.1.x for older revisions of NIC 50-RE requires another GSDML file, namely GSDML-V2.1-HILSCHER-NIC 50-RE PNS-20081210.xml which is not compatible with the firmware version 1.2.x or higher.

2.3 Configuration Software and Tools

The netX Configuration Tool was updated from V1.0300.0.4646 to V1.0501.1.2108.

The main changes are

- The new configuration parameters for SERCOS III Slave firmware were integrated
- The configuration page for PROFINET IO Device was changed to configure up to 4 input and up to 4 output modules
- Parameter to activate the SPI interface was added (Modbus configuration page)
- Parameter to set the watchdog time was added at the (SSIO configuration page)
- IO Monitor expanded
- Diagnostic expanded (extended Diagnostic for each protocol)

2.4 Documentation

The User Manual and Design Guide netIC 50 was updated from revision 11 to 16:

2.4.1 netX Dual-Port Memory

The netX Dual-Port Memory Interface Manual was updated from revision 8 to 9.

2.4.2 Protocol API

All Protocol API Manuals were updated respectively expanded:

Protocol	Revision on netIC DVD 2009-09-2	Revision on netIC DVD 2010-08-2
CANopen Slave	4	6
CC-Link Slave	4	6
CompoNet Slave	1	2
DeviceNet Slave	5	8
EtherCAT Slave	10	14
EtherNet/IP Adapter	6	8
Open Modbus/TCP	4	5
POWERLINK Controlled Node	6	7
PROFIBUS-DP Slave	9	10
PROFINET IO Device (V2)		14
PROFINET IO Device (V3)	2	5
SERCOS III Slave (V3)	-	4

Table 4: List of Protocol API Manuals

3 What's New – netIC DVD 2012-01-1 (latest)

This chapter describes the major changes from netIC DVD 2010-08-2 to 2012-01-1.

3.1 Hardware

The following netIC communication module was added to the netIC product line:

Module	Hardware Revision	Firmware
NIC 10-CCS	2	CC-Link Slave

Table 5: netIC Gateway Modules

NIC 10-CCS replaces NIC 50-CCS.

3.2 Firmware

The following list compares the firmware versions on the netIC DVD

Protocol	File name	Version on netIC DVD 2010-08-2	Version on netIC DVD 2012-01-1
CANopen Slave	nicmbcos.nxf	1.3.12.0 (including stack V2.4.3.0)	1.4.15.0 (including stack V2.4.5.2)
CC-Link Slave	nicmbccs.nxf	1.3.12.0 (including stack V2.4.5.0)	1.4.15.0 (including stack V2.7.1.0)
CompoNet Slave	nicmbcps.nxf	1.3.12.0 (including stack V1.0.2.0)	-
DeviceNet Slave	nicmbdns.nxf	1.3.12.0 (including stack V2.2.7.0)	1.4.15.0 (including stack V2.3.4.0)
EtherCAT Slave	nicmbeccs.nxf	1.3.12.0 (including stack V2.5.10.0)	1.4.15.0 (including stack V2.5.17.2)
EtherNet/IP Adapter/Slave	nicmbeis.nxf	1.3.12.0 (including stack V2.3.4.0)	1.4.15.0 (including stack V2.5.12.0)
Open Modbus/TCP	nicmbomb.nxf	1.3.12.0 (including stack V2.3.5.0)	1.4.15.0 (including stack V2.3.16.0)
POWERLINK Controlled Node	nicmbpls.nxf	1.3.12.0 (including stack V2.1.22.0)	1.4.15.0 (including stack V2.1.28.0)
PROFIBUS DP Slave	nicmbdps.nxf	1.3.12.0 (including stack V2.3.30.0)	1.4.15.0 (including stack V2.3.32.7)
PROFINET IO Device	nicmbpns.nxf	1.3.12.0 (including stack V3.4.11.0)	1.4.15.0 (including stack V3.4.26.3)
PROFINET IO Device Fiber Optic	nicpnsfo.nxf	1.3.12.0 (including stack V3.4.11.0)	1.4.15.0 (including stack V3.4.26.3)
SERCOS III Slave	nicmbs3s.nxf	1.3.12.0 (including stack V3.0.11.0)	1.4.15.0 (including stack V3.0.32.0)
VARAN Client (Slave)	nicmbvrs.nxf	-	1.4.15.0 (including stack V1.0.4.0)

Table 6: Firmware Versions on netIC DVD

The Changelog for each Firmware is on the DVD in the directory:

DVD:\Firmware\netIC\Changelog

3.2.1 New Firmware Features

The following new functions were added to Ethernet based firmware:

- Host can read the MAC address

Firmware version 1.4.12.0 and higher has the MAC address readable for the host on registers 14 to 16.

3.2.2 EtherNet/IP Adapter/Slave Firmware

New: Device Level Ring (DLR)

Stack version 2.3.1.0 and higher: DLR (Device Level Ring) as Beacon based ring node supported.

Tree, line and ring topology is supported now.

New: Address Conflict Detection

Stack version 2.4.1.0 and higher: ACD (Address Conflict Detection) is supported.

3.2.3 EtherCAT Slave Firmware

Changes: In EtherCAT Slave stack V2.5.15.0 (and higher) consistency checks for some services were added. See firmware change log for details. Application programs could get error responses now, if wrong values are used.

3.2.4 Open Modbus/TCP Firmware

Stack version 2.3.4.0 and higher: Now both Ethernet ports of the netIC card can be used for Open Modbus/TCP communication.

3.2.5 VARAN Client (Slave)

The VARAN client (slave) firmware was added. The firmware can be used with the NIC 50-RE.

3.3 Configuration Software and Tools

The netX Configuration Tool was updated from V1.0501.1.2108 to V1.0503.2.439.

The main changes are

- The configuration parameters for VARAN client (slave) firmware were integrated

Windows® Operating System

SYCON.net now supports Windows® Vista 32 bit, Windows® 7 32 bit and Windows® 7 64 bit.

Administrator rights are required.

3.4 Documentation

3.4.1 netIC User Manual and Design Guide

User Manual and Design Guide: netIC

The netIC design guide was updated from revision 16 to 21.

The main changes are

- The description of netIC configuration via the netX Configuration Tool has been removed from the manual and is now subject of an own separate manual **Operating Instruction Manual, netX Configuration Tool for netIC** which is also supplied on the netIC DVD.
- The description of netIC configuration via Modbus/RTU has been removed from the manual and is now subject of an own separate manual **Application Note, Protocol Parameter via Modbus, Configuration netIC** which is also supplied on the netIC DVD.
- Timing diagrams and table for synchronous serial interface (SSIO) was corrected
- An extensive description how to use acyclic read and write services with a detailed practical example has been added to the manual, see the largely extended section *Acyclic Services*.
- A new section *Deinstallation, Decommissioning, Replacement and Disposal* has been added.
- A new section *Special Legal Regulation for NIC 50-REFO* has been added.
- A new section *Limitations when using netX Configuration Tool* has been added.
- The description of the pin 26 (GPIO) has been updated and now gives a recommendation concerning protection circuitry.
- Ethernet MAC Address and list of returned firmware names have been added to the description of the System Information Block.
- The description of the system flags and the command flags has been updated.
- LED descriptions have been corrected and updated.

Operating Instruction Manual: netX Configuration Tool for netIC

The description of the netX Configuration Tool is now an own manual. This manual contains the description about

- installation of the netX Configuration tool,
- selecting and downloading a firmware,
- configuring the netIC and
- diagnostic

Application Note: Protocol Parameter via Modbus – Configuration netIC

The description of the configuration via Modbus RTU is now an own manual.

3.4.2 netX Dual-Port Memory

The netX Dual-Port Memory Interface Manual was updated from revision 9 to 11.

3.4.3 Protocol API

Many Protocol API Manuals were updated respectively expanded:

Protocol	Revision on netIC DVD 2010-08-2	Revision on netIC DVD 2012-01-1
CANopen Slave	6	6
CC-Link Slave	6	7 (updated)
CompoNet Slave	2	-
DeviceNet Slave	8	9 (updated)
EtherCAT Slave	14	15 (updated)
EtherNet/IP Adapter	8	9 (updated)
Open Modbus/TCP	5	5
POWERLINK Controlled Node	7	8 (updated)
PROFIBUS-DP Slave	10	11 (updated)
PROFINET IO Device	6	8 (updated)
SERCOS III Slave (V3)	4	6 (updated)
VARAN Client (Slave)	-	2 (new)

Table 7: List of Protocol API Manuals

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4.2 Contacts

Headquarters

Germany

Hilscher Gesellschaft für
Systemautomation mbH
Rheinstrasse 15
65795 Hattersheim
Phone: +49 (0) 6190 9907-0
Fax: +49 (0) 6190 9907-50
E-Mail: info@hilscher.com

Support

Phone: +49 (0) 6190 9907-99
E-Mail: de.support@hilscher.com

Subsidiaries

China

Hilscher Systemautomation (Shanghai) Co. Ltd.
200010 Shanghai
Phone: +86 (0) 21-6355-5161
E-Mail: info@hilscher.cn

Support

Phone: +86 (0) 21-6355-5161
E-Mail: cn.support@hilscher.com

France

Hilscher France S.a.r.l.
69500 Bron
Phone: +33 (0) 4 72 37 98 40
E-Mail: info@hilscher.fr

Support

Phone: +33 (0) 4 72 37 98 40
E-Mail: fr.support@hilscher.com

India

Hilscher India Pvt. Ltd.
New Delhi - 110 025
Phone: +91 11 40515640
E-Mail: info@hilscher.in

Italy

Hilscher Italia srl
20090 Vimodrone (MI)
Phone: +39 02 25007068
E-Mail: info@hilscher.it

Support

Phone: +39 02 25007068
E-Mail: it.support@hilscher.com

Japan

Hilscher Japan KK
Tokyo, 160-0022
Phone: +81 (0) 3-5362-0521
E-Mail: info@hilscher.jp

Support

Phone: +81 (0) 3-5362-0521
E-Mail: jp.support@hilscher.com

Korea

Hilscher Korea Inc.
Suwon, 443-734
Phone: +82 (0) 31-695-5515
E-Mail: info@hilscher.kr

Switzerland

Hilscher Swiss GmbH
4500 Solothurn
Phone: +41 (0) 32 623 6633
E-Mail: info@hilscher.ch

Support

Phone: +49 (0) 6190 9907-99
E-Mail: ch.support@hilscher.com

USA

Hilscher North America, Inc.
Lisle, IL 60532
Phone: +1 630-505-5301
E-Mail: info@hilscher.us

Support

Phone: +1 630-505-5301
E-Mail: us.support@hilscher.com