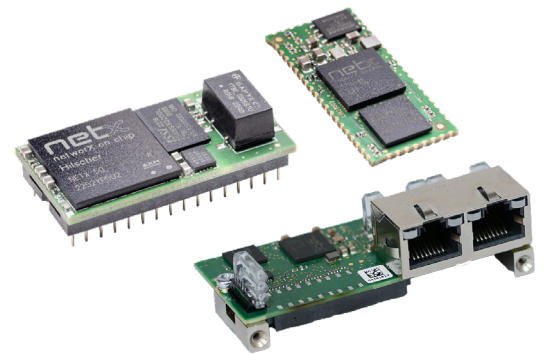


Compact Communication Modules

For cost-efficient field devices

- All major industrial protocols as Device
- One hardware for all Industrial Ethernet protocols
- Cybersecure modules based on netX 90 SoC
- Ready to use, due to preloaded firmware
- Firmware update via integrated webserver
- DPM, SPI or UART host interface
- Low power consumption down to 1 W



Feature	netRAPID 90	netIC 52 / netIC 50	comX 90 / comX 52
Controller / Device	Device-only	Device-only	Device-only
Dimension	15 mm x 32 mm	21 mm x 42 mm	30 mm x 70 mm
Industrial Ethernet / Fieldbus	Both	netIC 52 RE / netIC 50 FB	comX 90 RE / comX 52FB
Mounting	Soldered	Plugged (DIL-32 IC)	Two metal blocks with M2.5 thread
Host Interface	SPM	Modbus RTU via UART/SPI	SPM / DPM, SPM
Application CPU	Separate Cortex-M4 processor for individual applications	No	No
Security & IIoT-ready	Yes	No	Yes (comX 90)



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netRAPID – netIC – comX

Device solutions for intelligent field devices



Same function – same API – same tools

- » Hilscher netX SoC is the core technology of the communication solutions
- » Identical drivers, configuration tools and API independent of the application
- » Change of the hardware format without fundamental changes of the software structure

Device-only

- » The Device modules are specifically designed for demanding field devices

Configuration tools

Communication Studio

One configuration and diagnosis toolchain for all networks

- » Offline configuration
 - Selecting and configuring a driver, device assignment
 - Configuring the fieldbus
- » Online commissioning
 - Connecting the device
 - Downloading the configuration
- » Diagnosis
- » OPC UA and MQTT configuration



netX Studio IDE

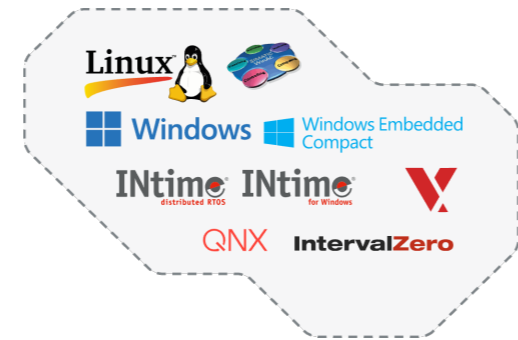
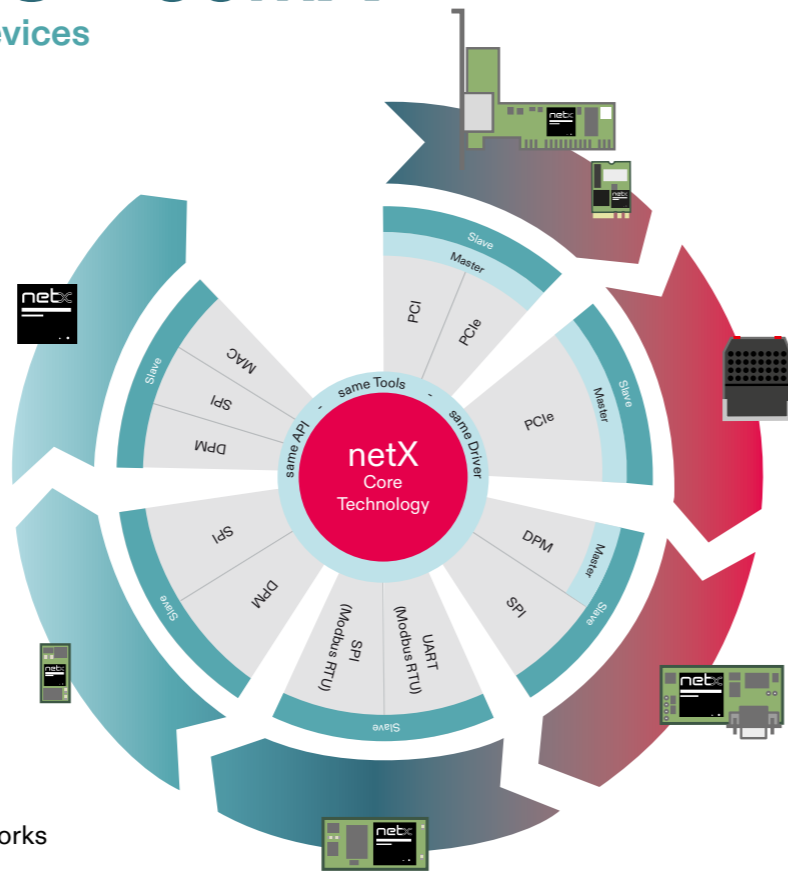
- » Secure Boot configuration
- » Firmware signature
- » Public Key installation

Command-line tools for production environments

All in one package

- Bundle of hardware, firmware, license, device driver / toolkit, configuration tool and support.

**Additional fee for license and selected drivers*



Fast software integration

- » Standard user interface (cifX API) for all device drivers
- » Contains all functions for initialization, parametrisation, exchange of I/O data and acquisition of status information
- » Device drivers for all relevant operating systems
- » C-toolkit for own driver development

Product highlights

netRAPID

- Ready-to-solder netX 90 Design
- SPI interface to the host
- Multi protocol design with pins for Industrial Ethernet and Fieldbus
- Integrated Cortex-M4 processor for application tasks



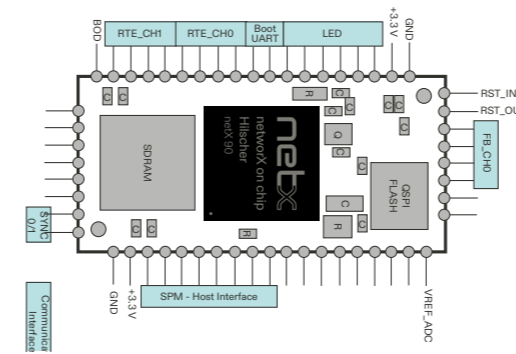
netIC

- Pluggable communication IC in the DIL-32 standard format
- Well-known Modbus RTU protocol as application interface
- Graphical configuration tool for fast commissioning

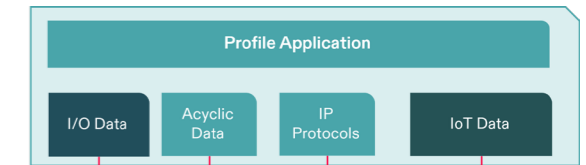


comX

- Pluggable communication module with robust screw connection
- SPM or 8-/16-bit host interface
- Variant with (CA) or without (CN) network connector



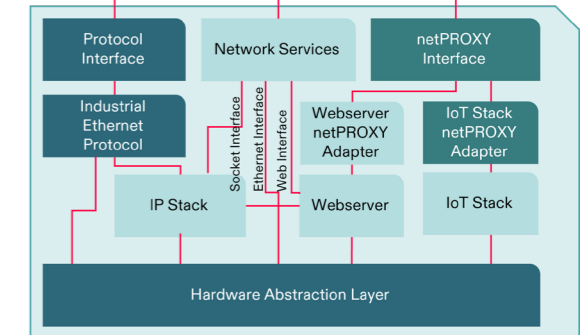
→ User Application



→ Data Mapping in Dual Port Memory



→ Prebuilt Communication Firmware



Common software application interface

- Based on Hilscher's Platform strategy a common software API to the application is offered
- Access from either an external host or the netX 90 integrated ARM® Cortex® M4 application processor
- Three separate channels for cyclic/acyclic Real-Time-Ethernet data, TCP socket / raw Ethernet Interface and IIoT data via OPC UA or MQTT are offered



Security ready

- CryptoCore hardware accelerator for hash, symmetric & asymmetric encryption
- Secure Boot option
- Security Configuration with key generation and software signing
- Secure Communication with certificate & key and user management

All netX 90 designs are security and IIoT ready



Industrial IoT ready

- PROFINET, EtherCAT, EtherNet/IP or ModbusTCP combined with OPC UA / MQTT
- OPC UA Server (Base Specification Version 1.04) and MQTT publisher (Version 3.1.1)
- IoT configuration plug-in for standard Communication Studio



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Product information

Technical data

	NRP H90	NIC 52 / NIC 50	COMX 90 / COMX 52
Communication Controller	netX 90	netX 52 / netX 50	netX 90 / netX 52
Integrated Flash	8 MB serial Flash EPROM*	4 MB serial Flash EPROM	8 MB / 4 MB serial Flash EPROM
Integrated RAM	8 MB SDRAM*	8 MB SDRAM	8 MB SDRAM / -
Connector Type	54 Pin solder contacts 1 mm with 0.8 mm grid	32 Pin Dual-In-Line (DIL)	CA: 50 Pin SMT connector, 1.27 mm grid CN: Additional 30 Pin SMT connector
Host interface	SPM	UART, SPI	SPM / DPM, SPM
Diagnostic interface	UART	UART	UART / UART, USB
Power supply	+3.3 V ± 5 % DC	+3.3 V ± 5 % DC	+3.3 V ± 5 % DC
Current consumption at 3.3 V	240...310 mA (typ.)	RE: 450 mA (typ.) CO: 330 mA (typ.) DN: 370 mA (typ.) DP: 330 mA (typ.)	RE: 201 mA (typ.) CO: 370...400 mA DN: 400...440 mA DP: 400...440 mA CC: 400...450 mA
Operating temperature range, Air flow 0.5 m/s	-20 °C...+85 °C	-20 °C... +70 °C	RE: -20°C ..+75 °C CO: -20 °C...+70 °C DN: -20 °C...+70 °C DP: -20 °C...+70 °C CC: 0 °C...+55 °C
Storage temperature range	-40 °C...+85 °C	-40 °C...+85 °C	-40 °C...+85 °C
CE sign, UKCA sign, RoHS	✓	✓	✓

*Variant without memory available
Note: All technical data may be changed without further notice.

Productname	Brief description	Part number	Industrial Ethernet (2-port)	Industrial Ethernet (1-port)	Fieldbus
NIC 52	DIL-32 Communication-IC	1544.XXX	.100	-	-
NIC 50	DIL-32 Communication-IC	1541.XXX	-	-	.420 (DPS) .540 (COS) .520 (DNS)
NRP H90	Ready-to-solder netX 90 design	7691.XXX (box, 10 pieces) 7692.XXX (tray, 56 pieces) 7693.XXX (package, 448 pieces)	.100 .120 (ECS) .160 (S3S) .180 (PLS) .670 (CCISB) .830 (EIS) .850 (PNS) .860 (OMB)	.600 (1PNS) .610 (1EIS) .620 (1ECS)	.420 (DPS) .540 (COS) .520 (DNS)
NRP H90\F8D8	Ready-to-solder netX 90 design with 8 MB Flash + 8 MB SDRAM	7691.XXX (box, 10 pieces) 7692.XXX (tray, 56 pieces) 7693.XXX (package, 448 pieces)	.102 .122 (ECS) .162 (S3S) .182 (PLS) .302 (PNSIOT) .312 (EISIOT) .322 (ECSIOT) .332 (OMBIOT) .672 (CCISB) .832 (EIS) .852 (PNS) .862 (OMB)	.602 (1PNS) .612 (1EIS) .622 (1ECS)	.422 (DPS) .542 (COS) .522 (DNS)
COMX 90	Communication module	1591.XXX (COMX 90CA)	.100	-	-
COMX 52	Communication module	1581.XXX (COMX 52CA) 1582.XXX (COMX 52CN)	-	-	.420 (DPS) .540 (COS) .520 (DNS) .740 (CCS)



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