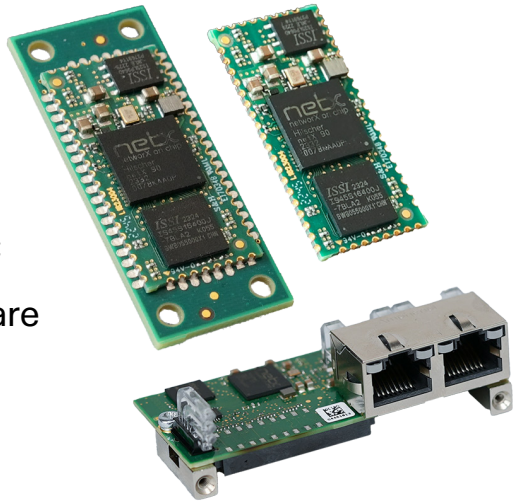
Compact Communication Modules

For Secure Cost-efficient Field Devices



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

Feature	netRAPID 90	netRAPID 90IC	comX 90 / comX 52
Controller / Device	Device-only	Device-only	Device-only
Dimension	15 mm x 32 mm	18 mm x 45 mm	30 mm x 70 mm
Industrial Ethernet / Fieldbus	Both	Both	comX 90 RE / comX 52FB
Mounting	Soldered	Plugged via SMT connector	Two metal blocks with M2.5 thread
Host Interface	SPI	SPI	SPI / DPM, SPI
Application CPU	Separate Cortex-M4 processor for individual applications	Separate Cortex-M4 processor for individual applications	No
Security & IIoT-ready	Yes	Yes	Yes (comX 90)

→ Compact Communication Modules
Hotline: +49 (0) 6190 9907-90
www.hilscher.com

netRAPID & comX

Device solutions for secure field devices

Same function – same API – same tools

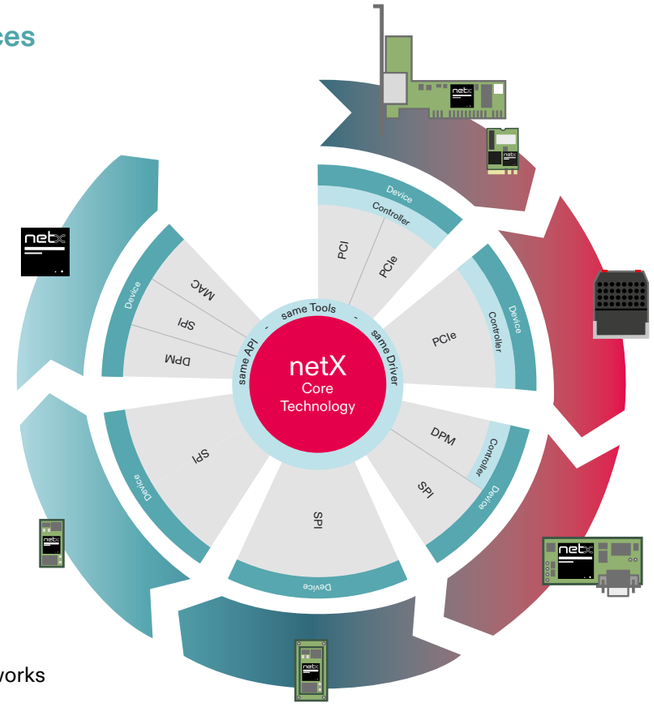
» Hilscher netX SoC is the core technology of the communication solutions

» 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 tool chain

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

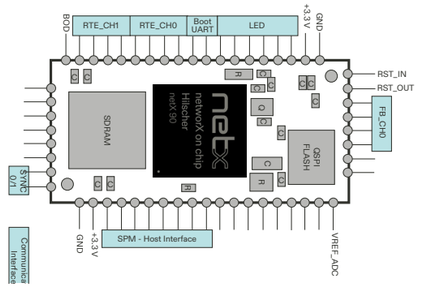
netRAPID

→ Secure netX 90-based module

→ SPI interface to the host

→ Multi protocol design with pins for Industrial Ethernet and Fieldbus

→ Integrated Cortex-M4 processor for application tasks



netRAPID IC

→ Secure Plug-In module

→ netRAPID as option module

→ Modern SMT connector and holes for robust screw mounting

→ Fieldbus interface optional via bracket boards (AIFX)

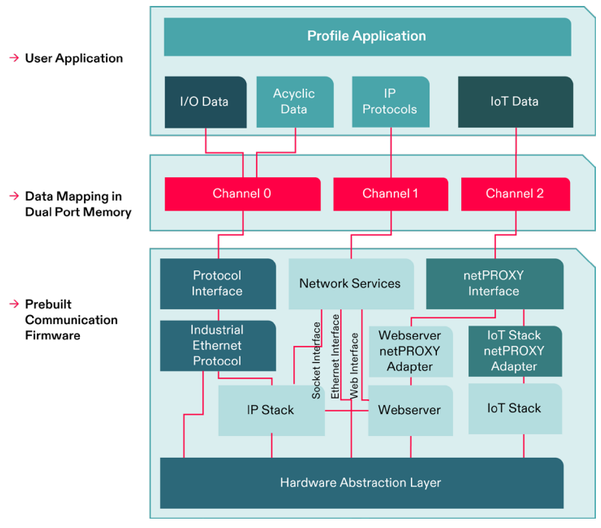
comX

→ Secure flexible module

→ SMT-connector and metal blocks for robust screw mounting

→ SPI or 8-/16-bit DPM host interface

→ Variant with (CA) or without (CN) network connector



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

All netX 90 designs are security and IIoT ready

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

Industrial IoT ready

→ PROFINET, EtherCAT, EtherNet/IP or ModbusTCP combined with OPC UA / MQTT

→ OPC UA Server (Base Specifcation Version 1.04) and MQTT publisher (Version 3.1.1)

→ IoT configuration plug-in for standard Communication Studio

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empowering communication

Product information

Technical data

	NRP H90	NRP H90 IC	COMX 90 / COMX 52
Communication Controller	netX 90	netX 90	netX 90 / netX 52
Integrated Flash	8 MB serial Flash EPROM*	8 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, 0.8 mm grid	52 Pin SMT connector, 0.8 mm grid	CA: 50 Pin SMT connector, 1.27 mm grid CN: Additional 30 Pin SMT connector
Host interface	SPI	UART, SPI	SPI / DPM, SPI
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	185 mA (typ.)	185 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 0.375 m/s	-40 °C...+85 °C	-20 °C...+85 °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)		Ind. Eth. (1-port)	Fieldbus
NRP H90 IC\ F8D8	Secure plug-in communication module	7680.XXX	.122 (ECS) .162 (S3S) .182 (PLS) .302 (PNSIOT) .312 (EISIOT) .322 (ECSIOT)	.332 (OMBIOT) .672 (CCIBS) .832 (EIS) .852 (PNS) .862 (OMB)	-	.422 (DPS) .542 (COS) .522 (DNS)
NRP H90	Secure netX 90-based communication module (with 8 MB Flash + 8 MB SDRAM)	7691.XXX (box, 10 pcs.) 7692.XXX (tray, 56 pcs.) 7693.XXX (package, 448 pcs.)	.100 .120 (ECS) .160 (S3S) .180 (PLS)	.670 (CCIBS) .830 (EIS) .850 (PNS) .860 (OMB)	.600 (1PNS) .610 (1EIS) .620 (1ECS)	.420 (DPS) .540 (COS) .520 (DNS)
NRP H90\F8D8			.102 .122 (ECS) .162 (S3S) .182 (PLS) .302 (PNSIOT) .312 (EISIOT)	.322 (ECSIOT) .332 (OMBIOT) .672 (CCIBS) .832 (EIS) .852 (PNS) .862 (OMB)	.602 (1PNS) .612 (1EIS) .622 (1ECS)	.422 (DPS) .542 (COS) .522 (DNS)
COMX 90	Secure flexible 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)