

netJACK

Powerful exchangeable module for embedded Designs

Highlights

- For all major Fieldbus and Real-Time Ethernet protocols
- PCI Express, Dual-Port-Memory or SPI host interface
- Easy slide-in mounting without tools
- Locks and connects without additional components on the base board
- Complete communication device including network specific connection
- Consistent host interface for all protocols
- Additional functionality, like softPLC, visualization or own application possible



Communication & Application in a single module

The universal communication module netJACK with its PCI Express interface addresses in particular the embedded market with high-performance CPUs e.g. Intel Atom®. Alternatively there are options with traditional Dual-Port-Memory and fast serial SPI Interface.

All types have a compact design as closed module, which can be mounted without tools by an experienced amateur. As connector and mounting rails are formed as contact area and cut-outs on the baseboard, there are no additional costs for the device. Advantage of netJACK is the reduced module variety and the mounting immediate before shipment or at the customer.

With netJACK customers can realize the full range of communication interfaces of e.g. drives, HMI or Ident systems and at the same time implementing a PLC functionality or Visualisation. For customer specific requirements Hilscher offers an optimized Design- and Production service at reasonable costs.

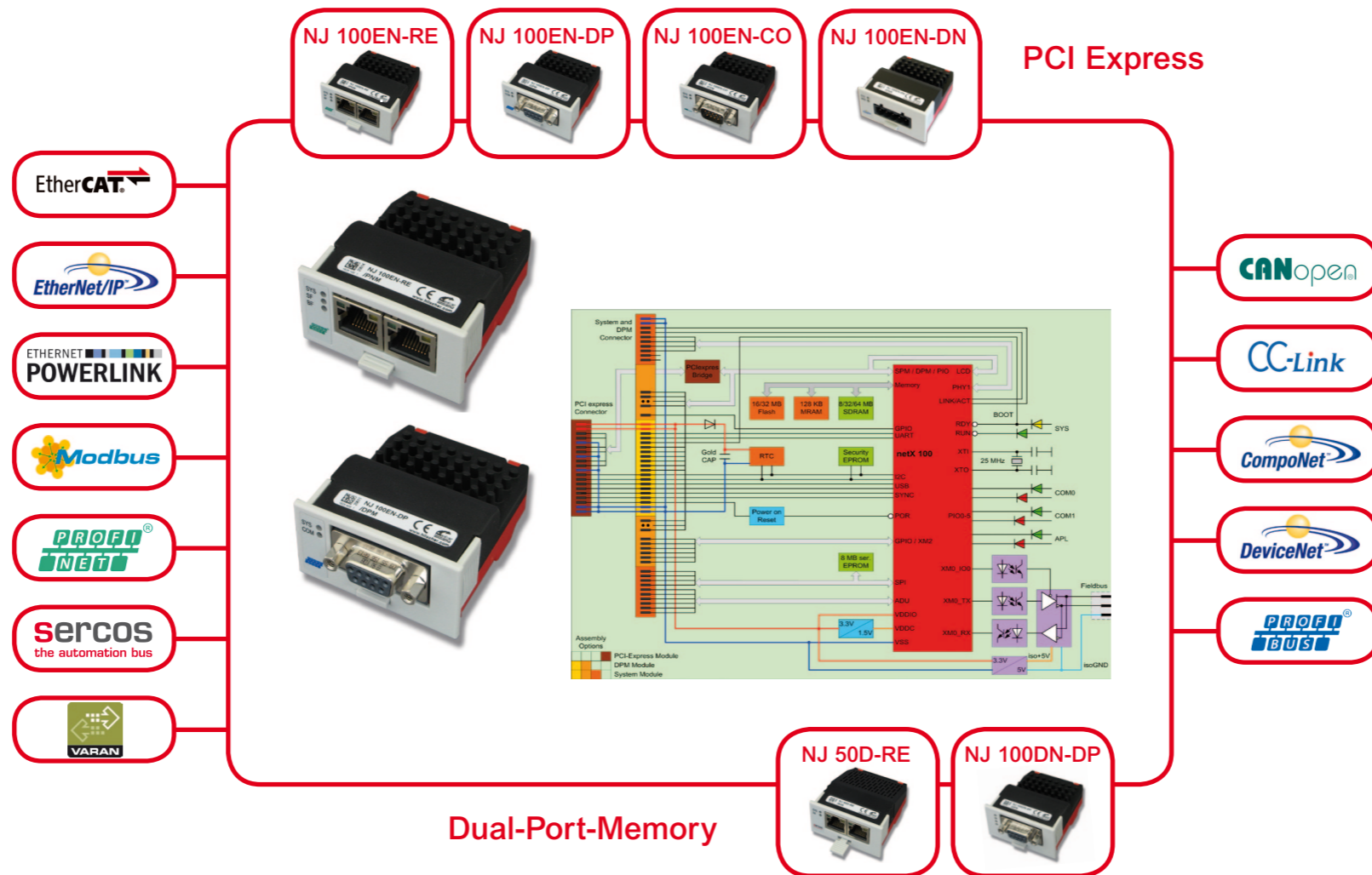
An availability of 10 years is guaranteed by using the netX technology.

netJACK - Pluggable Communication Module for RTE and Fieldbus

Advanced level communication with most cost-efficient PCB Design



All Real-Time Ethernet systems with one Hardware reduces logistic efforts



Connects to high performance CPUs like Intel Atom® via PCI Express



Easy mounting of the IP40 module at any point of the supply chain



Real-Time Ethernet Protocols

EtherCAT	Slave	Master
Slaves max.	--	200
Cyclic Data max.	512 Bytes	11520 Bytes
Acyclic Data	SDO Master/Slave SDO Slave/Slave SDO, COE, SSC Emergency Complex Slave 3 FMMU / 4 SYNC-Manager Distributed Clocks	CoE (CANopen over EtherCAT) Up-/Download, max. 1500 Bytes Get OD List Emergency Topology: Line
Functions		

Powerlink	Controlled Node/Slave
Cyclic Data max.	2980 Bytes
Acyclic Data	SDO Up-/Download SDO over ASND and UDP Poll Request/Response Time 1µs Version V2
Functions	

PROFINET IO	Device/Slave	Controller/Master
IO Devices max.	--	128
Cyclic Data max.	2048 Bytes (IOCR)	11472 Bytes
Acyclic Data	Read/Write Record, max 1024 Bytes/Telegram Alarmtreatment DCP minimum cycle time 250 µs (RTC3) Class 1&2 (unsynchronisiert) Class 3 (synchronisiert) Context Management by CLRPC Diagnostic, max. 200 Bytes/Telegram target-actual comparison configuration max. 244 modules / 1 submodule MRP Client supported LLDP, SNMP V1 MIB 2, Physik. Device	Read/Write Record, max. 4096 Bytes/Request Alarmtreatment DCP minimum cycle time 1 ms Context Management by CLRPC per Device one buffer for diagnostic data available
Functions		
Topologydetection		--

EtherNet/IP	Adapter/Slave	Scanner/Master
Cyclic Data max.	1008 Bytes	11472 Bytes
Unscheduled Data max.	1400 Bytes per Telegram	504 Bytes per Telegram
Functions	max. 8 Connections one I/O Connection Cyclic Connection UCMM supported DHCP, BOOTP DLR, ACD	max. 64 Connections Cyclic Connection UCMM class 3 supported DHCP, BOOTP
Server Services	Get_Attribute_All/Single Set_Attribute_All/Single	Get_Attribute_Single/All Set_Attribute_Single/All
Modbus TCP	Client, Server	
Function Code	1, 2, 3, 4, 5, 6, 15, 16, 23	
Register (16-Bit)	max. 121, 123 or 125 Register per Telegram	
Coil (1-Bit)	max. 1968 or 2000 Coils per Telegram	
Message Mode	Server, In/Out-Data Image not used	
E/A-Modus Server	max. 11520 Byte E/A Daten	
SERCOS III	Slave	Master
Slaves max.	--	511
Realtime Data	400 (incl. Connection Control)	11520 (incl. Connection Control)
Acyclic Data	Service Channel	Service Channel
Functions	Phase Run Up, Synchronization min. cycle 250 us max. 8 Subdevices SCP_FixCFG, SCP_VarCFG FSP_IO, FSP_Drive V1.1.2	Phase Run Up, Synchronization min. cycle 250 us Bus Scan
Version		1.1.1 / 1.1.2
VARAN	Client/Slave	
Cyclic Data max.	256 Byte	
Functions	PLL functionality to synchronize client application with VARAN network; integrated 2 Port-Splitter for daisy chain topology support V1.1.1.0	
Version		

Fieldbus Protocols

CANopen	Slave	Master
Nodes max.	--	126
Cyclic Data max.	1024 Bytes	7168 Bytes
SDO Up- and Download	max. 200Bytes/Request	Consumer/Producer
Emergency	Producer	Consumer/Producer
Functions	Node-/Life Guard., Heartbeat, PDO Mapping, NMT Management, SYNC, Emergency synchronized, remotely request and event driven (change of state)	
PDO Communication	max. 64 Rx/TxPDO 11 Bit	max. 512 Rx/TxPDO 11 Bit
CAN		
CompoNet	Slave	
Slave type	Word or Bit IN, Mix and OUT	
Cyclic Data max.	2 - 256 I/O points (Bits)	
Baudrate detection	yes	
Telegrams	OUT, TRG, Beacon, B_Event, A_Event, CN, IN	
Acyclic Data	Explicit Messaging, A_Event	
PROFIBUS	Slave	Master
Slaves max.	--	125
Cyclic Data max.	488 Bytes	7168, 244 Bytes/Slave
Acyclic Read/Write	240 Bytes	240 Bytes/Slave
DPV1 Class 1, 2	yes	yes
Configuration Data	244 Bytes	244 Bytes/Slave
Appl.specific Parameter	237 Bytes	237 Bytes/Slave

CC-Link	Slave	Master
Stationtype	Remote Device Station	
Cyclic Data max.	368 Bytes IN and OUT	
IN/OUT data	112 Bytes (RY/RX), 256 Bytes (RWw/RWr)	
Extension Cycles	1, 2, 4, 8	
Version	2.0	
DeviceNet	Slave	Master
Slaves max.	--	63
Cyclic Data max.	510 Bytes	7168, 255 Bytes/Slave
Acyclic Data	Get/Set_Attribute max.240 Bytes /Req.	
I/O Connections	Poll, Change-of-State, Cyclic, Bit-Strobe	
Functions	Predefined Master-Slave Connection Set	
	--	UCMM supported

The data mentioned applies for netJACK 100. For netJACK 50 and netJACK 10 possibly other values might apply. All technical data is preliminary and can be changed without notice.

Note:
netJACK will always be delivered with preloaded Firmware.
If netJACK will be used as Master, a license is needed in the hardware, which will be ordered together with netJACK via a type code.

A System-DVD with Firmware, Driver and Configuration tool can be ordered separately or as part of the Evaluation Board.

Technical Data/ Product Overview

Technical Data	Parameter	Value	Parameter	Value
	Operating Temperature	-20... 65 °C	Emission	CISPR 11 class A
	Operating Voltage	+3.3 V / typ. 800 mA	Noise Immunity	EN 61131-2:2003
	Dimensions (L X W x H)	53,4 x 25,2 x 19,2 mm / front plate 60 x 50,4 x 19,2 mm / module	Mounting	by cut out on the base board
	Processor	netX 10 / netX 50 / netX 100	Connector	Samtec FSI-120-03-G-D-AB für NJ 100EN Samtec FSI-130-03-G-D-AB für NJ 10D / 50D
	Weight	max. 80 g	LED Indicators	SYS, COM 0, COM 1, APL, Link, Rx/Tx
	CE Sign	yes	Shock and Vibration	EN60068-2-6 Fc / EN60068-2-27 Ea

Overview	Description	Number	Article	
	NJEB-D	1600.000	Evaluationboard for Dual-Port-Memory	
NJEB-E	1600.010	Evaluationboard for PCI Express		
NJ 10D-CCS/CCS	1652.740/CCS	netJACK 10 Dual-Port-Memory CC-Link /Slave		-Q2/2012-
NJ 10D-COS/COS	1652.540/COS	netJACK 10 Dual-Port-Memory CANopen /Slave		-Q2/2012-
NJ 10D-CPS/CPS	1652.760/CPS	netJACK 10 Dual-Port-Memory CompoNet /Slave		-Q2/2012-
NJ 10D-DNS/DNS	1652.520/DNS	netJACK 10 Dual-Port-Memory DeviceNet /Slave		-Q2/2012-
NJ 10D-DPS/DPS	1652.420/DPS	netJACK 10 Dual-Port-Memory PROFIBUS-DP /Slave		-Q2/2012-
NJ 50D-RE /xxx	1632.100/xxx	netJACK 50 Dual-Port-Memory Real-Time Ethernet		
/ECS		/EtherCAT Slave		
/EIS		/EtherNet/IP Adapter		
/OMB		/Open Modbus/TCP Client, Server		
/PLS		/POWERLINK Controlled Node		
/PNS		/PROFINET IO RT Device		
/S3S		/SERCOS III Slave		
/VRS		/VARAN Client		
NJ 100DN-CO /COM /COS	1623.500/COx	netJACK 100 Dual-Port-Memory CANopen /Master /Slave		-Q2/2012-
NJ 100DN-DN /DNM /DNS	1623.510/DNx	netJACK 100 Dual-Port-Memory DeviceNet /Master /Slave		-Q2/2012-
NJ 100DN-DP /DPM /DPS	1623.400/DPx	netJACK 100 Dual-Port-Memory PROFIBUS-DP /Master /Slave		
NJ 100DN-RE /xxx	1623.100/xxx	netJACK 100 Dual-Port-Memory Real-Time Ethernet		-Q2/2012-
/ECM /ECS		/EtherCAT Master	/EtherCAT Slave	
/EIM /EIS		/EtherNet/IP Scanner	/EtherNet/IP Adapter	
/OMB			/Open Modbus/TCP Client, Server	
/PLS			/POWERLINK Controlled Node	
/PNM /PNS		/PROFINET IO Controller	/PROFINET IO Device	
/S3M /S3S		/SERCOS III Master	/SERCOS III Slave	
/VRS			/VARAN Client	
NJ 100EN-CO /COM /COS	1625.500/COx	netJACK 100 PCI Express CANopen /Master /Slave		
NJ 100EN-DN /DNM /DNS	1625.510/DNx	netJACK 100 PCI Express DeviceNet /Master /Slave		-Q1/2012-
NJ 100EN-DP /DPM /DPS	1625.400/DPx	netJACK 100 PCI Express PROFIBUS-DP /Master /Slave		
NJ 100EN-RE /xxx	1625.100/xxx	netJACK 100 PCI Express Real-Time Ethernet		
/ECM /ECS		/EtherCAT Master	/EtherCAT Slave	
/EIM /EIS		/EtherNet/IP Scanner	/EtherNet/IP Adapter	
/OMB			/Open Modbus/TCP Client, Server	
/PLS			/POWERLINK Controlled Node	
/PNM /PNS		/PROFINET IO Controller	/PROFINET IO Device	
/S3M /S3S		/SERCOS III Master	/SERCOS III Slave	
/VRS			/VARAN Client	

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