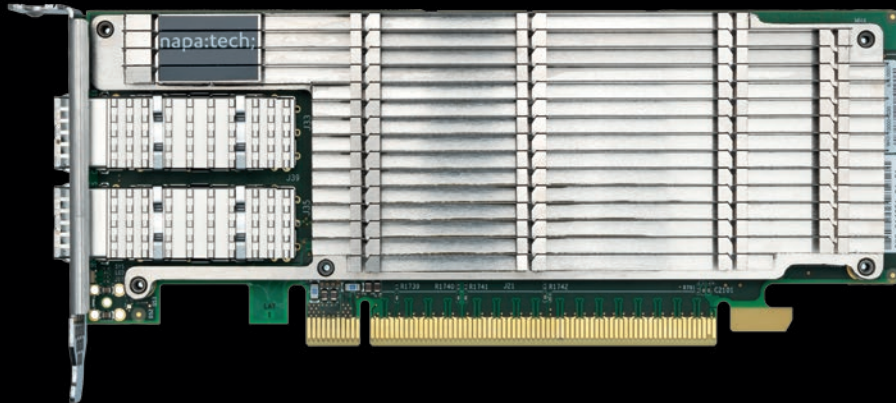


NT50B01 SmartNIC with Link™ Virtualization Software

2x10/25G

DATA SHEET



Low-Profile PCIe SmartNIC

The NT50B01 SmartNIC enables 2x10/25G applications, depending on your choice of software. This provides flexibility to create high-performance solutions in 1U server platforms for 10/25G network infrastructures.

NT50B01 is a low-profile PCIe card specifically engineered to reduce footprint without compromising on performance. The card not only saves rack space and reduces TCO – it also provides outstanding agility and scalability for the future. The design delivers best-of-breed reliability and includes a proprietary full body heatsink developed to ensure optimal thermal performance for all critical components.

Based on a Xilinx Kintex UltraScale+ FPGA, NT50B01 can be reconfigured to support specific SmartNIC functionality. By exploiting the FPGA programmability, features and capacity can be extended to continually accommodate data growth and changing industry standards.

Open vSwitch (OVS) Hardware Offload

NT50B01 comes with fully qualified software, compliant with popular operating systems to enable easy qualification and quick deployment.

Combined with Napatech Link™ Virtualization Software, the NT50B01 SmartNIC provides a hardware-based solution for full Open vSwitch (OVS) offload - dramatically increasing performance while reducing CPU utilization.

Link™ Virtualization Software supports a broad range of applications and use cases and can quickly improve an organization's ability to monetize virtualized applications.

Highlighted features

- OpenStack support
- OVS/DPDK hardware offload
- VirtIO w/vDPA
- Live Migration
- VM Monitoring, North-South & East-West packet forward to local or remote destination



Open vSwitch



DPDK



OpenStack

FEATURE HIGHLIGHTS AND SPECIFICATIONS

Features

- Full OVS-DPDK hardware offload
- Switching performance @ 64B
 - 300Mpps P2P
 - 65Mpps PVP (ideal)
 - 38Mpps PVP (0.001% drop-limit)
- OpenStack support (Victoria & Train)
- VirtIO
 - Fully accelerated VirtIO 1.1 with vDPA
 - Transparent 0.95/1.0 support
- Live Migration (VirtIO 1.1)
- OVS statistics
- VM-to-VM mirroring for analytics, SLA monitoring, regulatory compliance
- Non-degrading HW Megaflow cache for tracking billions of flows
- Extensive and configurable match processing for L2-4 packet headers
- VLAN/VXLAN encapsulation/decapsulation
- Q-in-Q
- RSS load balancing
- Link aggregation (active/active and active/standby)
- Jumbo frame support
- Quality of Service (QoS)
- IPv4/v6
- Hardware QoS

Supported Pluggable Modules

- 10GBASE-SR, CR, LR, ER
- 25GBASE-SR, LR, LR-BiDi

Software

- Host OS: RedHat 8, Ubuntu Server LTS (On Request)
- Client VM supports
 - Data Plane Development Kit (DPDK)
 - Linux NetDev (Kernel 5.0+)

Hardware

- Xilinx XCKU15P FPGA
- 10 GB DDR4 SDRAM
- PCIe Gen3 16 lanes @ 8 GT/s
- 2 × SFP28 network ports
- Flash memory with support for two boot images
- Physical dimensions: ½-length and ½-height PCIe
- Weight (excl. pluggable modules): 350 g
- MTBF according to IEC TR 62380 (UTE C 80-810 –2004): 991,182 hours
- Power consumption including 25GBASE-SR modules and typical traffic load: 24 Watts

Environment for NT50B01

- Operating temperature: –5 °C to 55 °C (23 °F to 131 °F) measured around the SmartNIC
- Operating humidity: 5% to 85%
- Altitude: < 1,800 m
- Airflow: >= 3.5 m/s

Regulatory Approvals and Compliances

- PCI-SIG®, NEBS level 3, CE, CB, RoHS, REACH, cURus (UL), FCC, ICES, VCCI, RCM

Orderable products

Product	Data Rate
NT50B01-2x10/25	2×10/25 Gbps