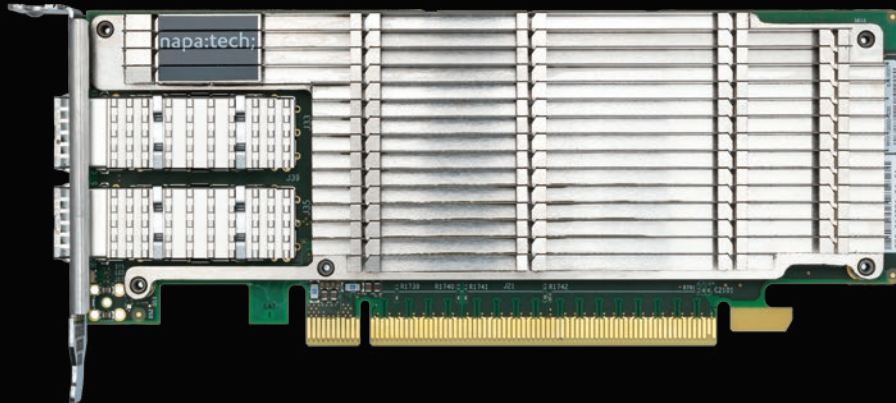




## NT50B01 SmartNIC with Link™ Virtualization Software

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	2x10/25 Gbps