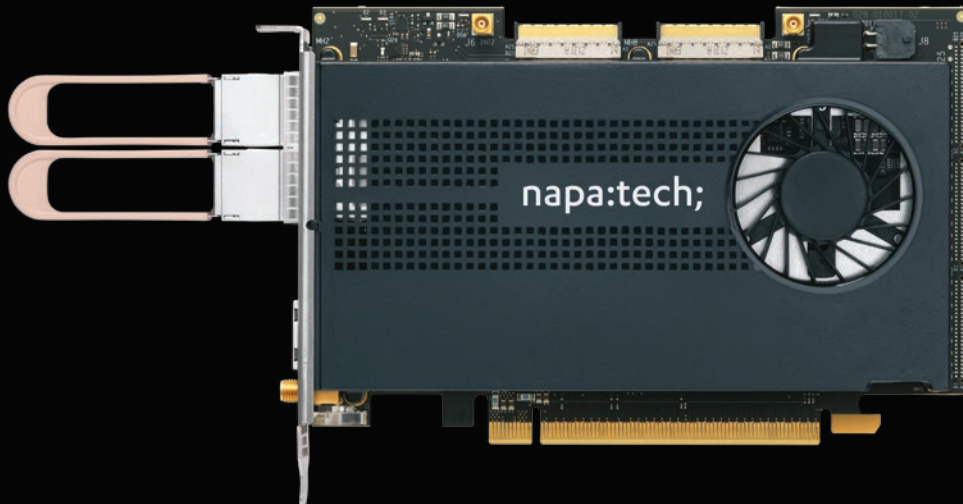


NT200A02 SmartNIC with Link™ Virtualization Software

2x10/25G

DATA SHEET



The NT200A02 SmartNIC is a full-height, half-length QSFP28 PCIe card. By taking advantage of the programmability in the FPGA, the NT200A02 can be reconfigured to support specific SmartNIC functionality, to add new features, and to extend its capacity to continually accommodate data growth and changing industry standards.

Full Open vSwitch (OVS) offload

The NT200A02 with Link™ Virtualization software provides a hardware-based solution for full Open vSwitch (OVS) offload – significantly increasing performance while reducing CPU consumption.

Link™ Virtualization supports a broad range of applications and use cases and can quickly be qualified and deployed to monetize virtualized applications. This way, expensive server resources can focus on revenue generating virtual functions rather than data delivery.

Hardware Offload

Some data processing tasks, such as encryption and compression, may require a significant amount of CPU cores when performed in software. By offloading these functions to the NT200A02, performance is significantly increased by freeing up CPU cores to focus on revenue generating virtual functions.

Virtual Machine monitoring

Napatech's VM-to-VM monitoring solution provides insight into both North-South as well as East-West traffic in the server without consuming CPU cores.

As the NT200A02 sees all data, it is possible to replicate traffic in hardware and send the OVS mirror traffic to either a virtual appliance or an external analytics solution - without consuming CPU cores.

NT200A02 is also available in a passive cooling (NEBS) variant.

Highlighted features

- OpenStack support
- Full OVS/DPDK offload
- VirtIO w/vDPA
- DPDK+vDPA support
- Live Migration



Open vSwitch



DPDK



OpenStack

FEATURE HIGHLIGHTS AND SPECIFICATIONS

Features

- Full OVS-DPDK offload (OVS 2.12/DPDK 18.11)
 - 130 Mpps switching performance @ 64B
 - 100 Gbps switching capacity
- OpenStack (DevStack) support
- VirtIO
 - 1.1 vDPA full offload (one CPU core)
 - 0.95/1.0 through RelayCores
- DPDK+vDPA support
- Live Migration (VirtIO 1.1)
- OVS statistics
- 1K megaflows (wildcarded flows) offload
- Up to billions of individual flows
- Extensive and configurable match processing for L2, L3, L4 packet headers
- VLAN/VXLAN encapsulation/decapsulation
- Q-in-Q
- Hash-based load balancing
- Link aggregation
 - active/standby
 - active/active
- Traffic port mirroring
- 63 datapath VFs/VMs
- Jumbo frame support
- Quality of Service (QoS)
- IPv4/v6
- 10/25 GbE support

Supported pluggable modules

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

Software

- Operating systems: CentOS 8, RedHat 8, Ubuntu Server LTS
- Data Plane Development Kit (DPDK)
- Napatech NTAPI for highest performance and advanced features
- Linux NetDev (Kernel 5.0+)

Hardware

- Xilinx XCVU5P FPGA
- 12 GB DDR4 SDRAM
- PCIe Gen3 16 lanes @ 8 GT/s
- 2 × QSFP28 network ports
- RJ45-F 100/1000BASE-T IEEE1588 PTP
- SMA-F PPS input/output
- 2 × internal MCX-F PPS and NT-TS time sync
- Stratum-3 ^[1] compliant TCXO
- Flash memory with support for two boot images
- Built-in thermal protection
- Physical dimensions: ½-length and full-height PCIe
- Weight (excl. pluggable modules):
 - NT200A02-SCC: 355 g
 - NT200A02-NEBS: 350 g
- MTBF according to UTE C 80-810:
 - NT200A02-SCC: 317,821 hours
 - NT200A02-NEBS: 398,565 hours
- Power consumption:
 - NT200A02-SCC: TBD
 - NT200A02-NEBS: TBD

Environment for NT200A02-SCC

- Operating temperature: 0 °C to 45 °C (32 °F to 113 °F)
- Operating humidity: 20% to 80%

Environment for NT200A02-NEBS

- 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: >= 2.5 m/s

Regulatory Approvals and Compliances

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

Orderable port speed configurations

Product	Data Rate
NT200A02-2x10/25	2x10/25 Gbps

Also available in a passive cooling (NEBS) variant.

^[1] Stratum 3E compliant TCXO is available on demand