

SmartNICs for Reconfigurable Computing

NT80E3-2-PTP 8x10G/2x40G PCIe GEN3

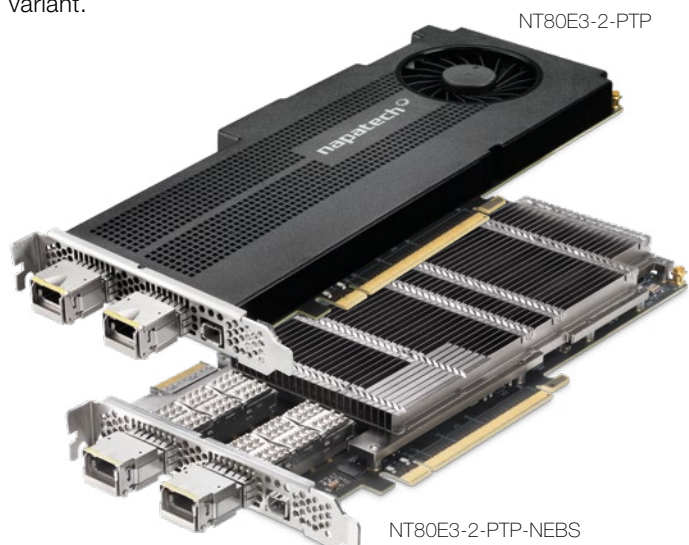
8 x 10 Gbps / 2 x 40 Gbps PACKET CAPTURE AND ANALYSIS

Use cutting-edge network SmartNIC technology to add real-time line-rate performance to your application. Napatech 8 x 10 Gbps / 2 x 40 Gbps SmartNICs provide full packet capture and analysis of network data at 80 Gbps with zero packet loss. The Napatech SmartNIC will capture all frames, including erroneous frames normally discarded by standard NICs. The Napatech NT80E3-2-PTP can also be used for in-line application acceleration.

The Napatech SmartNIC allows you to merge data from ports into a single, time-ordered analysis stream. It supports 1-128 packet streams using intelligent hardware flow distribution to allow your application to scale to higher packet rates with no packet loss. The Napatech SmartNIC will distribute packets based on flow or on e.g. L3/L4 filter criteria.

The 8 GB DDR3 RAM buffer allows buffering packets on the SmartNIC to prevent packet loss during peak server loads. Packets are hardware time-stamped when they arrive at the network ports, ensuring that the time stamp is always reliable.

The SmartNIC also comes in a NEBS level 3 compliant variant.



NT80E3-2-PTP

NT80E3-2-PTP-NEBS

FEATURE HIGHLIGHTS

- Network ports: 2 x QSFP+
- Capture of Ethernet traffic: Full 8 x 10 Gbps or 2 x 40 Gbps
- Zero packet loss for all frame sizes
- 8 GB DDR3 RAM buffer (800 ms at 80 Gbps)
- Typical CPU load: < 5% of one core
- Addressing up to 1 TB application buffer memory
- Packet or segment delivery to application
- Hardware-accelerated:
 - Multi-port packet merge
 - Load distribution across up to 128 CPU cores
 - 1 ns time stamp resolution
 - Frame and protocol information
 - Filtering based on e.g. L3/L4 criteria
 - GTP, IP-in-IP, GRE and NVGRE tunneling support
 - IP fragment handling
 - Slicing at fixed or dynamic offset
 - RMON1 counters, including jumbo frames
- IEEE 1588-2008 PTP and PPS time synchronization
- OS time synchronization
- Easy-to-integrate API
- Linux, Windows, libpcap, WinPcap and DPDK

NAPATECH-SUPPORTED APPLICATIONS

Napatech SmartNICs enable OEM vendors to build high-performance network appliances based on standard servers. Examples of applications include:

- Revenue and services optimization
- Quality of experience optimization
- Financial latency measurement
- Customer experience analysis
- Data loss prevention
- Virtualized activity analysis
- Cyber defense
- Fraud detection and compliance management
- Infrastructure management and security
- Network and application performance
- Troubleshooting and compliance

SPECIFICATIONS

GENERAL FEATURES

- Full line-rate processing for all frames from 64 bytes to 10,000 bytes - keep or discard erroneous frames
- IEEE standard: IEEE 802.3 40/10 Gbps Ethernet support
- Network interface: 2 x QSFP+ ports
- Supported QSFP+ modules: 40GBASE-SR4, 40GBASE-LR4 and 40GBASE-SR-BiDi or QSFP+ breakout to 4 x 10GBASE-SR and 4 x 10GBASE-CR
- Data rate: 8 x 10 Gbps or 2 x 40 Gbps
- Typical CPU load: < 5%
- Time formats: PCAP-ns/-µs and UNIX 10 ns / 1 ns
- Time stamp resolution: 1 ns
- Stratum 3 compliant TCXO
- Pluggable options for IEEE 1588-2008 PTP and PPS time synchronization
- PTP slave in IEEE 1588-2008 default and telecom profiles

SmartNIC SOFTWARE

- Operating systems: Linux, Windows
- Napatech API for high performance and advanced features
- libpcap, WinPcap and DPDK
- IEEE 1588-2008 PTP stack
- SDK tools included in source code for debugging and prototyping and as application examples

SmartNIC HARDWARE

- Bus type: 16-lane 8 GT/s PCIe Gen3
- 8 GB onboard DDR3 RAM
- Flash: Support for two boot images
- Built-in thermal protection
- Physical dimensions: 3/4-length and full-height PCIe
- Weight excluding pluggable modules:
 - NT80E3-2-PTP: 455 g
 - NT80E3-2-PTP-NEBS: 475 g
- MTBF according to UTE C 80-810:
 - NT80E3-2-PTP: 263,546 hours
 - NT80E3-2-PTP-NEBS: 316,713 hours
- Power consumption including QSFP+ SR4 modules:
 - NT80E3-2-PTP: max 62 Watts
 - NT80E3-2-PTP-NEBS: max 62 Watts

ENVIRONMENT FOR NT80E3-2-PTP

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

ENVIRONMENT FOR NT80E3-2-PTP-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 PRODUCTS

Product	Data Rate
NT80E3-2-PTP	2 x 40 Gbps
NT80E3-2-PTP-8x10/2x40	8 x 10 Gbps / 2 x 40 Gbps

Also available in NEBS variants.

COMPANY PROFILE

Napatech helps companies to reimagine their business by bringing hyperscale computing benefits to IT organizations of every size. We enhance open and standard virtualized servers to boost innovation and release valuable computing resources that improve services and increase revenue. Our Reconfigurable Computing Platform™ is based on a broad set of FPGA software for leading IT compute, network and security applications that are supported on a wide array of FPGA hardware designs.

Additional information is available at www.napatech.com

Napatech. RECONFIGURABLE COMPUTING

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