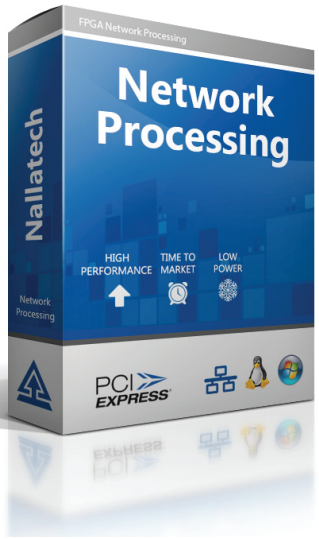
PCIe-287

FPGA Network Processing Card

The PCIe-287™ network processing card provides a powerful PCI Express computing and I/O platform for FPGA development and deployment across a range of application areas including Signal Intelligence, Netwo rk Security and Algorithm Acceleration.

Four SFP+ ports supporting a range of protocols including 10GbE LAN/WAN are directly coupled to two Kintex-7 FPGAs, supported by multiple banks of QDR-II SRAM and DDR3 SDRAM. A Gen2 PCI-Express interface provides high-bandwidth connectivity and seamless integration with the host environment.

The PCIe-287 is compatible with most high density server and blade platforms from leading vendors.



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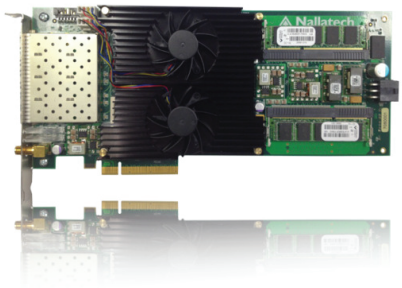


Multi-port accelerator Card Featuring two Xilinx Kintex-7 FPGAs & Memory

Key features

- PCI Express form factor
- Two Xilinx Kintex-7 K325T user FPGAs
- Four SFP+ ports supporting a range of 1G and 10G protocols including 10GbE (LAN and WAN)
- 8-lane PCI Express Gen 2 host interface
  - Up to 2.5 GB/s WRITE (system-to-card)
  - Up to 2.5 GB/s READ
- Six independent banks of 9MB QDR-II SRAM
- Two independent banks of 1GB DDR3 SDRAM
- Linux Operating System support

Benefits

» Commercial-off-the-shelf (COTS) hardware
Shorten time to market and reduce risk

» Four SFP+ ports
Flexible network I/O compatible with a wide range of networkvv interconnect

» PCI Express Gen2
High performance, industry standard interconnect

» Dual Kintex-7 FPGAs
Powerful processing capability with latest FPGA technology

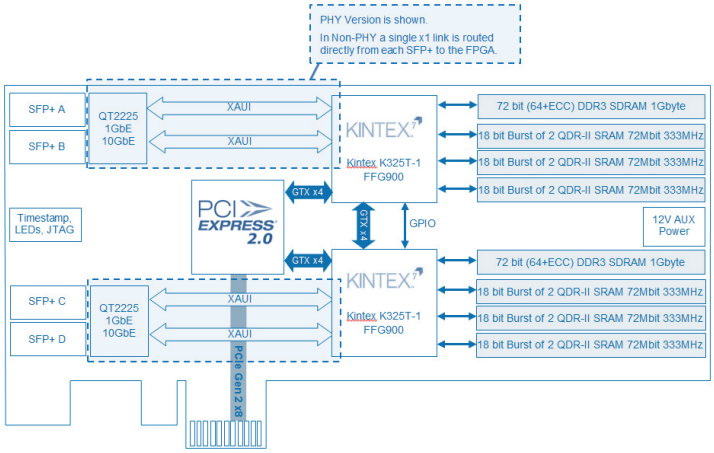
» Comprehensive suite of IP
Invest time developing your algorithm, not interfaces

The Leader in FPGA Accelerated Computing

Nallatech
a molex company

PCIe-287

Functional diagram



Supported Protocols

The table below shows a list of protocols that the PCIe-287N supports.

Protocol	Line Rate (bps)	PHY	Non-PHY
SONET OC-3	155M	-	✓
SONET OC-12	622M	-	✓
1GbE	1.25G	✓	✓
SONET OC-48	2.488G	-	✓
OTU1	2.66G	-	✓
SONET OC-192	9.953G	-	✓
10GbE WAN	9.953G	✓	✓
10GbE LAN	10.3125G	✓	✓
10G Fibre Channel	10.5187G	✓	✓*
OTU2	10.7G	-	✓*
OTU2e	11.09G	-	✓*
OTU1f	11.27G	-	✓*
OTU2f	11.317G	-	✓*

Note: Protocols with a * require -3 speed grade Kintex FPGAs

Full specification

Form factor

- Full-height, full-length PCI Express
- 4.376 x 9.5 inches (111 x 241mm)
- Single-slot width

Host interface

- 8-lane PCI-Express 2.0
- Up to 5GB/s total host bandwidth
- Actual performance is host computer chipset dependant

Processing

- 2x Xilinx Kintex-7 K325T user FPGA

QDR-II SRAM memory

- 6 independent 9MByte banks
- 18-bit data bus per bank (no ECC), burst of 2, data rate: 666Mbps
- Max. bandwidth per bank: 1.5GB/s

DDR3 SDRAM memory

- 2 independent 1GByte banks
- 72-bit data bus (64-bit + ECC)
- Data rate: 800Mbps
- Max. bandwidth per bank: 7.2GB/s

PCI backplate interfaces

- 4x SFP+ ports
- 2 PHY options:
  1. AMP-QT2225 – PHY layer bridge chip, supports 1G & 10G operation
  2. No PHY – provides direct input into GTX ports on FPGA (appropriate IP required)
     - 1G operation: 1000BASE-X and 1000BASE-T
     - See table for full list of protocols
- SMA input to FPGAs for ns accurate timestamping

Application Programming Interface (API)

- Driver & Nallalib API for 64-bit Linux
- Runtime FPGA programming, hardware control, and application communication

Development and debug software

- Optional Framework Builder Dev Kit
- Supports multiple design flows including VHDL and Verilog
- Compatible with Xilinx ISE and all major synthesis design flows
- Access to onboard JTAG header for Chipscope and iMPACT

Electrical

- On-card power derived from 3.3V and 12V PCIe slot
- FPGA power dissipation is application dependent
- 6-pin GPU-style header for applications that need more power.

Quality

- Manufactured to IPC610-Class 2 standard.
- Designed and Supplied to ISO9001:2000 certification
- RoHS compliant

Cooling

- Delivered with fan-sink which provides active cooling
- Please contact Nallatech for further information

Environmental

- Cooling: Air convection
- Operating temperature: 0℃ to 50℃
- Storage temperature: -40℃ to 80℃
- Relative humidity: 45 to 95% (non-condensing)

Ordering and deliverables

Deliverables

- PCIe-287 FPGA card
- Product DVD
- NallaLIB API and documentation
- IP cores (including VHDL source)
- 30 days maintenance (technical support)
- 1 year warranty
- Access to online support lounge

Ordering

- Contact us for leadtime and pricing information

International Distributors

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