XtremeScale™ 8722

Dual-Port 10GbE SFP+ Open Compute Platform (OCP) Server Adapter

SOLARFLARE®

A XILINX COMPANY

For IT architects building highly efficient data centers with OCP servers, the XtremeScale 8722 is a full-featured enterprise-class NIC supporting a long list of advanced network protocols and operating platforms. The 8722 is also the first in a new class of server adapters which can be deployed as FPGA-like Smart NICs for software defined traffic engineering using APIs. Multiple 8722 adapters form a platform for data center-wide Smart NIC Fabrics delivering micro segmented acceleration, telemetry and security services which scale with each server, VM or container.

Features and Benefits

FOR OCP SERVERS
The XtremeScale 8722 is an OCP version of the Solarflare NICs widely deployed in high frequency trading environments which require ultra-high bandwidth, ultra-low latency and ultra-high reliability.

A POWERFUL 10GBE NIC
With two 10Gbps ports, the XtremeScale 8722 provides high throughput. In addition, the ScaleOut Onload application is included and uses kernel bypass technology for latency as low as 2 μsec.
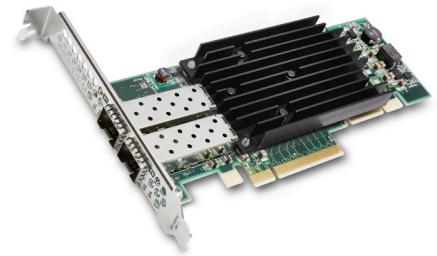
A SMART NIC
Inside every 8722 Ethernet controller ASIC is an XtremePacket Engine which allows this general-purpose NIC to inspect every packet at line-speed. Software defined network engineers can then use Solarflare APIs to shape the network traffic.

A PLATFORM FOR A SMART NIC FABRIC
Hyperscale cloud service providers are micro segmenting their network services by deploying them in proprietary Smart NIC fabrics which scale with each server. The 8722 from Solarflare support the industry's first Smart NIC Fabric for the enterprise, including shrink-wrapped applications for micro segmented acceleration, packet monitoring and security.

A full-featured 10GbE NIC

A new class of Smart NIC with the FPGA-like ability to inspect packets and shape traffic at line speed
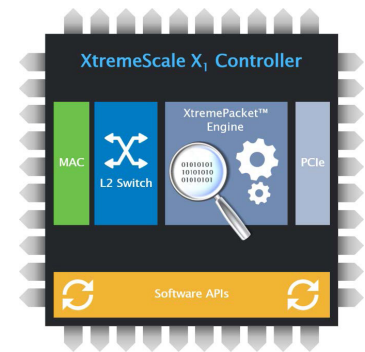
A software defined platform for micro segmented acceleration, security and visibility fabric services which scale with every server, VM or container

Specifications

Optional Fabric Services
- Universal Kernel Bypass (UKB) Applications (Onload, TCP Direct)
- SolarCapture Application (Packet monitoring and capture)
- SolarSecure Application (Micro segmented hardware-based packet surveillance, fingerprinting, filtering and firewalls)
- Precision Timing Protocol Application (PTP)

Stable Precision Oscillator
- Stratum 3 compliant

I/O Virtualization
- 2048 guest OS protected vNICs; SR-IOV; 240 virtual functions; 16 physical functions; 16 NIC partitions

PCI Express
- PCIe 3.1 x8 @ 8.0 GT/s

SFC9240 10G Ethernet Controller
- Supports high-performance 10GbE

SFP+ Support
- Supports optical SFP+ modules including Solarflare SFM10G-SR, Direct-Attach Copper, Active Optical Cables

Low Latency
- Cut-through architecture/intelligent interrupt coalescing

Packet Rate
- 30Mpps sustained line rate with all packet sizes

Receive Side Scaling (RSS)
- Distributes IPv4, IPv6 loads across all CPU cores; MSI-X minimizes interrupt overhead

Hardware Offloads
- TSO, LRO, GSO, IPv4/IPv6 and TCP/UDP checksums

IP Flow Steering
- Hardware directs packets based on IP, TCP, UDP headers

Advanced Packet Filtering
- 4096 multicast filters; 4096 VLANs/port; adaptive TCP/ UDP/IP, MAC, VLAN, RSS, RFS filtering; Accelerated RFS

Remote Boot
- PXE; unattended installation; UEFI; Solarflare Secure Boot

Management
- SNMP, ACPI v3.0, MCTP SMBus, RMII (NC-SI)

Overlay Network Acceleration
- VXLAN, NVGRE, GENEVE, adaptable to custom overlays

Switching Support
- Integrated Layer 2 Ethernet switch, VEB/ Virtual switch

Virtualization Support
- VMware ESXi 5.x/6.0/6.5; Microsoft Hyper-V; Linux KVM

Operating Systems
- RHEL 6, 7, MRG; SLES 11, 12, SLERT; Debian 7.x, 8.x; Ubuntu 14.04
- LTS, 14.10, 15.04; other Linux; Windows Server 2008 R2, 2012, 2012 R2 2016

Regulatory Product Code
- SR211

Standards & Compliance
- EEE802.3-2012 Ethernet Base Standard, including 802.3bx, 802.3bd, 802.3x
- 802.3ae (10 Gigabit Ethernet over fiber)
- 802.3z (1000BASE-X Gbit/s Ethernet over Fiber-Optic at 1Gbit/s (125 MB/s)
- 1000BASE-X
- 10GBASE-CR -SR -LR
- Dual SFP+ (SFF-8431 Rev 4.1) Connectors
- RoHS Compliant

Power
- 10.5W (typical)

Operating Range
- Operating Temp: 0° to 50ºC
- Airflow: Min. 280 LFM at 50ºC

Physical Dimensions
- Type 2 OCP Mezzanine card 2.0 dual port SFP+ 10GbE Form Factor

Ordering Information
- SFN8722

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