

XtremeScale™ 8522M

10GbE Dual Port NIC for PCIe 3.0 x8 Slots



For IT architects building highly efficient software defined data centers, the XtremeScale 8522M is a full-featured enterprise-class NIC supporting a long list of advanced network protocols and operating platforms. The 8522M is also a platform for data center-wide NIC Fabrics delivering micro segmented acceleration, telemetry and security services which scale with each server, VM or container. For data center traffic engineers, the fabric services running on XtremeScale adapters are software-defined so that network traffic can be shaped and automated using well defined APIs.

Features and Benefits

A POWERFUL 10GBE NIC

With two 10Gbps ports, the XtremeScale 8522M provides ultra high throughput, great small packet performance and very low latency. The base NIC includes Onload® kernel bypass, combined with DPDK, to provide both TCP- and packet-based APIs for application acceleration.

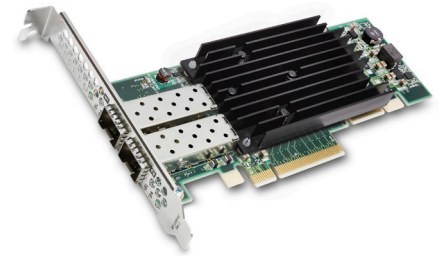
A SMART NIC

Inside the ASIC of every 8522M Ethernet NIC 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.

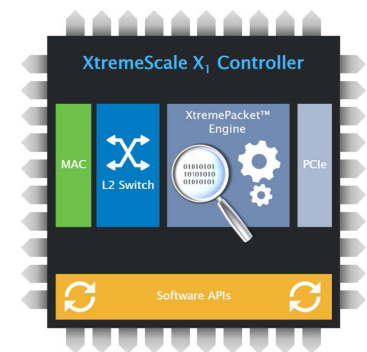
A PLATFORM FOR A SMART NIC FABRIC

Hyperscale cloud service providers are micro-segmenting their network services by deploying them in proprietary Smart NIC fabrics which scale with each server. The 8522M from Solarflare delivers 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



Advanced Features and Benefits

Optional Fabric Services

- Application Acceleration (Onload®, TCPDirect)
- SolarCapture® Application (Packet monitoring and capture)
- ServerLock Local (Micro segmented hardware-based packet surveillance, fingerprinting, filtering and firewalls)
- Precision Time 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 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 over SMBus

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

- SR212

Specifications

Standards & Compliance

- IEEE802.3-2012 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 1 Gbit/s (125 MB/s))
- 1000BASE-X
- 10GBASE-CR -SR -LR
- Dual SFP+ (SFF-8431 Rev 4.1)
- RoHS Compliant

Power

- 10W (typical)

Operating Range

- Operating Temp: 0° to 55° C
- Airflow: Min. 250 LFM at 55° C

Physical Dimensions

PCB dimensions (PCIe Half-length low profile)

- L: 16.76 cm (6.6 in)
- W: 6.89 cm (2.7 in)

Overall dimensions with full height bracket

- L: 18.1 cm (7.13 in)
- W: 12.1 cm (4.76 in)

Overall dimensions with low profile bracket

- L: 18.1 cm (7.13 in)
- W: 8.0 cm (3.15 in)

Ordering Information

- SFN8522M

For more information please visit: solarflare.com

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