Product Brief

Solarflare Solarstorm SFC9000

Solarflare Solarstorm SFC9000 10GbE LOM/Controller Family

Ideal for high-density, virtualized server environments

The Solarstorm® SFC9000 LOM/Controller family, including the world's first integrated 10GBASE-T LOM, features the industry's lowest power and a fully virtualized architecture, enabling unmatched performance and scalability for next-generation, virtualized data centers.

Features

Network Interface

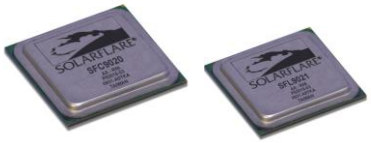
- Integrated dual-port 10GbE (XAUI, KX4, CX4, XFI/SFI)
- Integrated single-port 10GBASE-T
- Triple Speed (100/1000/10G)
- Jumbo Frame Support
- Adapter Teaming and IEEE 802.3ad Link Aggregation
- SFP+ MSA

PCIe Host Interface

- x8 PCI Express 2.0 Compliant (5 GT/s)
- Virtual NIC support
- MSI and MSI-X
- SR-IOV
- VPD

Performance

- Receive Side Scaling (RSS)
- Transmit Rate Pacing (per queue)
- iSCSI Acceleration
- TCP Chimney Compliant
- TCP/IP Checksum Offload



The SFC9000 LOM/controller family is Solarflare's second generation 10G Ethernet controller, and is designed to address the most pressing issues facing data center managers. This new family of controllers is equipped to handle the application loads of a next generation of multi-core processors, while at the same time providing unmatched power efficiency, which is a critical need when consolidating servers or deploying high-density servers.

The SFC9000 family also addresses the emerging trend of network convergence, providing concurrent support for networking, iSCSI and FCoE traffic – while remaining true to the need for cost-effective, power-efficient, and high-performance network IO.

The SFC9000 LOM/Controllers can be used in most 10G Ethernet applications, including LAN-on-motherboard, embedded adapters, blade mezzanine cards, and PCIe adapters.

Low Power

The SFC9000 LOM/controller family consumes less than half the power of the leading competitors' products and delivers 5-10x the bandwidth efficiency of 1G Ethernet (BW/Watt). This not only makes an integrated server solution viable, it can save thousands of dollars of operating costs in a typical data center environment.

Adapters based on the SFC9000 LOM/Controller family meet the Energy Star® requirement of less than 8 Watt/port power consumption.

Features

Performance Cont'd

- UDP Multicast Offload
- IP Flow Filtering
- IPv4/v6 Offloads
- Low Latency Hypervisor Cut-Through

Converged Network

- Fully compatible with O/S- based iSCSI initiators
- iSCSI Acceleration (digest offload)
- Fully compatible with O/S- based and open source FCoE initiators
- Supports concurrent TCP/IP, UDP Multicast, iSCSI and FCoE traffic

Power Management

- ACPI v3.0
- Dynamic Power Scaling™
- Link detect power mode
- Ultra low power mode

Management

- NC-SI, SMBus, IPMI
- PXE, iSCSI, UEFI Boot
- Wake-on-LAN (WoL)
- SNMP
- RMII

Fully Virtualized Architecture

The SFC9000 family is designed from the ground-up to optimize the performance of virtualized applications and maximize the utilization of network resources. With 10x the number of vNICs and virtual PCIe functions as the competition, the SFC9000 family can easily scale as the number of CPU cores and virtual machines continue to increase, enabling higher performance and greater manageability.

Leadership Performance

The SFC9000 family delivers the industry's lowest-latency and full line-rate performance (37 Gbps full duplex, both ports active). Furthermore, the SFC9000 family features a rich set of stateless offloads, which provide efficient acceleration of the most demanding network protocol tasks.

The SFC9000 family also features hypervisor cut-through and SR-IOV, which relieve network I/O bottlenecks hidden in virtualized environments—allowing IT managers to allocate server and network resources directly to applications. This accelerated performance of applications running on guest machines provides the highest possible performance and lowest CPU utilization in virtualized servers.

The SFC9000 family is also fully compatible with OpenOnload™, a high-performance, user-level network stack for Linux. OpenOnload bypasses much of the kernel networking overheads and is binary compatible with industry standard APIs and applications.

Specifications

Product Number

- SFL9021: 1-port 10GBASE-T LOM
- SFC9020: 2-port 10 Gbps Ethernet Controller

Package

- 29 mm x 29 mm, 784-ball FC-BGA

Power (typical)

- SFC9020: 2.4 W
- SFL9021: 6.6 W

Operating Range

- 0° to 70° C

Standards & Compatibility

- PCIe 1.1 & 2.0
- IEEE 802.3ae, 802.3aq, 802.3x, 802.1Qau, 802.1Qaz, 802.1Qab, 802.1Qbb
- 100 Mbps/1 Gbps/10 Gbps speeds
- RoHS 6/6 Compliant

Software Driver Support

- Windows® Server 2003 & 2008
- Windows® Server 2008 R2 (Windows® 7)
- VMware ESX 3.5 & vSphere 4.0
- VMware NetQueue
- Microsoft® Hyper-V™ Server 2008 R2
- Citrix® XenServer™ 5.x & Direct Guest Access
- Redhat 4/5
- SLES 9/10/11
- Solaris 10
- Compatible with iSCSI & FCoE software initiators