SOLARFLARE®

Dual-Port 10GbE SFP+ Onload Server Adapter

Solarflare® SFN6122F dual-port 10G Ethernet SFP+ Onload server adapter delivers unmatched message rates with low latency and jitter over standard Ethernet along with the lowest CPU utilization and power consumption, enabling the industry's best performance and scalability for financial services and other enterprise data centers.

SFN6122F is designed to address issues facing data center managers today. Equipped to handle increasing application loads of the latest multi-core processors, it delivers superior throughput and low latency, with minimal CPU load for the consolidation and deployment of high-density servers. The SFN6122F supports data networking with concurrent support of iSCSI and NAS traffic – while remaining true to the need for cost effective, power-efficient and high-performance network I/O.

Lowest Latency at Highest Message Rates

SFN6122F delivers the industry's lowest latency at high message rates to customers with leading edge financial services and enterprise data center deployments. SFN6122F also delivers the industry's highest message rate and lowest latency jitter, with full 40 Gbps bidirectional line-rate performance. Featuring a rich set of stateless offloads, it provides efficient acceleration of the most demanding network protocol tasks.

SFN6122F supports a wide range of drivers that are compatible with all Solarflare products, including the market-leading SFN5122F. SFN6122F also supports Solarflare's Open-Onload® application accelerator, a full-featured, high-performance user-level network stack for Linux. OpenOnload provides unprecedented low latency performance with application compatibility and protocol compliance, bypassing kernel and networking overheads, while featuring binary compatibility with standard APIs and applications.

Scalable, Hardware-Assisted Virtualization

With 10x the number of vNICs and virtual PCIe functions than the competition, SFN6122F performance scales as the number of CPU cores and virtual machines increase, resulting in enhanced application performance while supporting more applications per physical server. SFN6122F supports NetQueue, VMQ, and SR-IOV used to accelerate guest applications in leading hypervisors, such as VMware, Hyper-V, Linux KVM, and XenServer. This relieves network I/O bottlenecks in virtualized environments dedicating full network bandwidth directly to virtualized applications while maintaining full hypervisor management services.

Lowest Power

At less than 6 Watts, the SFN6122F consumes less than half the power of the leading competitors' products, and delivers 5-10x the efficiency of 1G Ethernet (Gbps/Watt). This results in a power efficient 10G network that can save thousands of dollars of operating costs for a typical data center. The SFN6122F is also compatible with the Energy Star® guideline for power consumption.

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Specifications

Product Number
SFN6122F
Dual-Port SFP+

Standards & Compliance
IEEE 802.3ae
IEEE 802.3ad
IEEE 802.1Q
IEEE 802.1p
IEEE 802.3x
RoHS Compliant

Power (typical)
SFN6122F: 5.9W

Operating Range
0° to 55° C
50 LFM, Min.

Physical Dimensions
L: 13.4 cm (5.3 in)
W: 6.9 cm (2.7 in)
End bracket height:
PCI Express standard
12.0 cm (4.7 in)
PCI Express low-profile
7.9 cm (3.1 in)

Regulatory product code: S6102

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Advanced Features

I/O Virtualization
2048 guest OS protected vNICs; 254 Virtual Functions

PCI Express
PCIe Gen 2.0 compliant @ 5.0 GT/s for full, 40 Gbps
bi-directional bandwidth

10 Gigabit Ethernet
Supports high-performance 10GbE

SFP+ Support
Supports optical & copper SFP/SFP+ modules; Direct-Attach,
Fiber (10G or 1G), 1G/10G combo, 1000BASE-T SFP

1000BASE-T SFP Support
Supports 1G 1000BASE-T SFP modules

Low Latency
Cut-through architecture/intelligent interrupt coalescing

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

Hardware Offloads
LSO, LRO, GSO; IPv4/IPv6; TCP, UDP checksums

Adapter Teaming/Link Aggregation
LACP, MLAG for redundant links & increased bandwidth

Jumbo Frames
9000 byte MTU for performance

IP Flow Filtering
Hardware directs packets based on IP, TCP, UDP headers

Advanced Packet Filtering
256 multicast filters; 4096 VLANs/port; adaptive TCP/UDP/IP,
MAC, VLAN, RSS, RPS, RFS filtering; Accelerated Receive
Flow Steering (RFS)

Intel QuickData™
Uses host DMA engines to accelerate I/O

Remote Boot
PXE, iSCSI boot; unattended installation

Management
ACPI v3.0, SNMP, SMBus, IPMI

Virtualization Support
ESX 3.5, vSphere 4.x, 5.0; Hyper-V; XenServer 5.6, 6.0; KVM;
NetQueue; VMQ; SR-IOV

Operating Systems
RHEL 5, 6; MRG; SLES 10, 11; SLERT; other Linux; Windows
Server 2003, 2008, 2008R2; OS X v10.6.x, v10.7; Solaris 10 (x86)

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