



SFN7122F

Flareon Ultra SFN7122F Dual-Port 10GbE PCIe 3.0 Server I/O Adapter

Flareon™ Ultra SFN7122F dual-port 10G Ethernet SFP+ server adapter delivers unmatched message rates with low latency and jitter over standard Ethernet along with low CPU utilization, enabling the industry's best performance and scalability for enterprise data center environments.

Flareon Ultra SFN7122F delivers the industry's lowest latency and highest message rates accelerating applications, such as high performance computing, cloud, grid, big data, storage, Web 2.0, and financial services in enterprise data center environments. Featuring a full set of stateless offloads, SFN7122F reduces CPU processing loads for the most demanding network tasks. With OpenOnload®, SFN7122F bypasses kernel and networking overheads, providing unprecedented performance with seamless application compatibility and protocol compliance. OpenOnload features binary compatibility with all standard APIs and applications.

Accelerated Applications and Optimized Server I/O

Flareon Ultra SFN7122F enables the lowest latency networking solutions for electronic/high frequency trading and other latency-sensitive applications. The SFN7122F accelerates HPC and Hadoop by providing high message rate, low latency interconnects for compute clusters. The SFN7122F's CPU offload along with high performance enables servers to provide more services to more users in cloud and grid environments. The SFN7122F also accelerates database, social networking, email, and other storage-intensive applications with high bandwidth and low latency for SAN and NAS environments.

Ultra-Low Latency

Flareon Ultra SFN7122F supports PCIe 3.0 with ultra-low latency features such as direct packet transfer (Tx PIO) mode and the templated send API. SFN7122 also features hardware acceleration to optimize packet delivery, such as UDP multicast replication, integrated layer 2 switching capability and VLAN insertion / removal, along with TCP segmentation offload (TSO) to reduce CPU load.

Scalable, Hardware-Assisted Virtualization

With 10x the number of vNICs and virtual PCIe functions than the competition, SFN7122F performance scales as the number of CPU cores and VMs increase, supporting more applications per physical server. SFN7122F also supports NetQueue, VMQ, and SR-IOV used to accelerate guest applications in leading hypervisors, such as ESXi, Hyper-V, KVM, and Xen. This relieves network I/O bottlenecks dedicating full network bandwidth directly to VMs while maintaining full hypervisor management services. Sixteen physical PCIe functions enable finer granularity and greater scalability when allocating Quality of Service for optimized bandwidth utilization as I/O dynamically fluctuates.

Platform for Delivering Network Services

Flareon Ultra SFN7122F enables deploying servers for a wide range of applications with a single server adapter. SFN7122F with AppFlex™ technology provides the flexibility to selectively add and control services such as network monitoring, precision time, security, and application acceleration to servers.

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www.solarflare.com



Specifications

Product Number
SFN7122F

Standards & Compliance

IEEE 802.3ae
IEEE 802.3ad
IEEE 802.1Q
IEEE 802.1p
IEEE 802.3x
RoHS Compliant

Power
5.9W (typical)

Operating Range
0° to 65° C
100 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 (4.725 in)
PCI Express low-profile
7.92 cm (3.12 in)

Order Information

Flareon Ultra SFN7122F
Dual-Port 10GbE PCIe 3.0
Server I/O Adapter

Options Order Information

SFS-PTP
Flareon SFN7000 Series
Precision Time Synchronization
with Hardware Time Stamping
License

SOLR-PPS-DP10G
Pulse Per Second (PPS)
dual-port 10GbE bracket kit
with PPS cable assemblies

Regulatory product code: S7120

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Advanced Features & Benefits

I/O Virtualization

2048 guest OS protected vNICs; 240 virtual functions;
16 physical functions

PCI Express

PCIe 3.0 x8 @ 8.0 GT/s

SFC9120 10G Ethernet Controller

Supports high-performance 10GbE

SFP+ Support

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

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 all CPU cores;
MSI-X minimizes interrupt overhead

Hardware Offloads

TSO, LRO, GSO; IPv4/IPv6; TCP, UDP checksums

Adapter Teaming/Link Aggregation

LACP for redundant links & increased bandwidth
(compatible with MLAG)

Jumbo Frames

9216 byte MTU for performance

Enhanced Tuning

Adaptive interrupt moderation

IP Flow Filtering

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 Receive Flow
Steering (RFS)

Intel QuickData™

Uses host DMA engines to accelerate I/O

Remote Boot

PXE, iSCSI boot; unattended installation

Management

SNMP, ACPI v3.0

Virtualization Support*

VMware ESXi; Microsoft Hyper-V; XenServer; Linux KVM;
SR-IOV

Operating Systems

RHEL 5,6, MRG; SLES 10, 11, SLERT; other Linux; Windows
Server*

*Future support. Please refer to the driver release notes at www.solarflare.com
for feature availability.

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