SOLARFLARE®



Flareon Ultra SFN7124F Quad-Port 10GbE PCIe 3.0 Server I/O Adapter

Flareon™ Ultra SFN7124F quad-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 SFN7124F quad-port 10G Ethernet SFP+ server adapter 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 with four 10GbE ports. Featuring a full set of stateless offloads, SFN7124F reduces CPU processing loads for the most demanding network tasks. With OpenOnload®, SFN7124F 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 SFN7124F enables the lowest latency networking solutions for electronic/high frequency trading and other latency sensitive applications. The SFN7124F accelerates HPC and Hadoop by providing high message rate, low latency interconnects for compute clusters. The SFN7124F's CPU offload along with high performance enables servers to provide more services to more users in cloud and grid environments. The SFN7124F 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 SFN7124F supports PCIe 3.0 with ultra-low latency features such as direct packet transfer (Tx PIO) mode and the templated send API. SFN7124F 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, SFN7124F performance scales as the number of CPU cores and VMs increase, supporting more applications per physical server. SFN7124F 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 SFN7124F enables deploying servers for a wide range of applications with a single server adapter. SFN7124F with AppFlex™ technology provides the flexibility to selectively add and control services such as network monitoring, precision time, security, and application acceleration to servers.

FlareonUltraSFN7124F

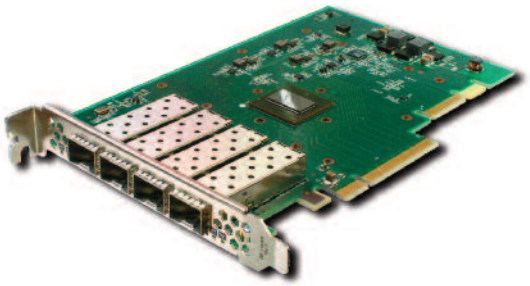
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SFN7124F

FlareonUltraSFN7124F

Specifications

Product Number
SFN7124F

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

Power
13W (typical)

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

Physical Dimensions
L: 16.75 cm (6.6 in)
W: 11.1 cm (4.37 in)
End bracket height:
PCI Express standard
12.0 cm (4.725 in)

Order Information
Flareon Ultra SFN7124F
Quad-Port 10GbE PCIe 3.0
Server I/O Adapter

Options Order Information
SFS-PTP
Precision Time License

SFS-SSFE
SolarSecure™ Filter Engine License

SFS-SCL
SolarCapture™ Live License

SFS-SCP-2x10G
SolarCapture Pro License for SFN7142Q and SFN7124F

SFS-CSS-2x10G
Capture SolarSystem License

SFS-PM
Performance Monitor License

SOLR-PPS-QP10G
Quad-Port 10GbE 1PPS Bracket Kit

Regulatory product code: SR202

SF-114414-CD Issue 2
SFN7124F_PB_061715
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Advanced Features & Benefits

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

PCI Express
PCIe 3.0 x8 @ 8.0 GT/s

SFC9140 10/40G 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; Linux KVM and Xen

Operating Systems
RHEL 5, 6, 7, MRG; SLES 10, 11, 12, SLERT; Debian 6.0, 7.0; Ubuntu 12.04 LTS, 10.04 LTS, 14.10; other Linux; Windows Server 2008, 2008 R2, 2012, 2012 R2; XenServer 6.2, 6.5; FreeBSD 10.x

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