Flareon Ultra SFN7022F Dual-Port 10GbE PCIe 3.0 Server I/O Adapter

Flareon™ Ultra SFN7022F dual-port 10G Ethernet SFP+ server adapter delivers excellent performance and scalability over standard Ethernet along with low CPU utilization for enterprise data center environments.

Flareon Ultra SFN7022F delivers industry-leading technology ideal for environments 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 state-less offloads, SFN7022F reduces CPU processing loads for the most demanding network tasks.

Accelerated Applications and Optimized Server I/O

Flareon Ultra SFN7022F accelerates HPC and Hadoop by providing high message rate interconnects for compute clusters. The SFN7022F's CPU offload – along with high performance – enables servers to provide more services to more users in cloud and grid environments. The SFN7022F 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 SFN7022F supports PCIe 3.0 and can be enabled with OpenOnload® software to provide ultra-low latency features such as direct packet transfer (Tx PIO) mode and the templated send API. SFN7022F 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, SFN7022F performance scales as the number of CPU cores and VMs increase, supporting more applications per physical server. SFN7022F 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 SFN7022F enables deploying servers for a wide range of applications with a single server adapter. SFN7022F with AppFlex™ technology provides the flexibility to selectively add and control services. With an OpenOnload® upgrade, SFN7022F can bypass kernel and networking overheads to deliver unmatched message rates with ultra low latency and low jitter. Upgrades for SolarCapture™ software and precision time synchronization (PTP) with hardware time stamping are also available.

FlareonUltraSFN7022F

SFN7022F

Specifications

Product Number
SFN7022F

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

Power
7.3W (typical)

Operating Range
0° to 55° 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 SFN7022F
Dual-Port 10GbE PCIe 3.0
Server I/O Adapter

Options Order Information
SFS-OOL
Flareon SFN7000 Series
OpenOnload License

SFS-PTP
Precision Time License

SFS-SSFE
SolarSecure™ Filter Engine
License

SFS-SCL
SolarCapture™ Live License

SFS-SCP-10G
SolarCapture Pro License for
10GbE Flareon™ Adapters

SFS-PM
Performance Monitor License

SOLR-PPS-DP10G
10GbE 1PPS Bracket Kit

Regulatory product code: S7120

Advanced Features & Benefits

Stable Precision Oscillator
Stratum 3 compliant

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

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 (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 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, 14.04 LTS, 14.10; other Linux; Windows
Server 2008 R2, 2012, 2012 R2; FreeBSD 10.0, 10.1;
XenServer 6.2, 6.5

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