



Flareon Ultra SFN7142Q Dual-Port 40GbE QSFP+ PCIe 3.0 Server I/O Adapter

Flareon® Ultra SFN7142Q dual-port 40G Ethernet QSFP+ 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 40GbE and 10GbE networks and data centers.

Flareon Ultra SFN7142Q 40GbE 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 networks and data centers. Featuring a full set of stateless offloads, SFN7142Q reduces CPU processing loads for the most demanding network tasks. With OpenOnload®, SFN7142Q 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.

SFN7142Q can be configured as a dual-port 40GbE or quad-port 10GbE adapter as each 40GbE QSFP+ port can also operate as dual 10GbE SFP+ ports by using breakout cables including the Solarflare SOLR-QSFP2SFP-1M & -3M QSFP+ to 2 SFP+ copper DAC cables.

Accelerated Applications and Optimized Server I/O

Flareon Ultra SFN7142Q 40GbE server adapter accelerates HPC and Hadoop by providing high message rate, low latency interconnects for compute clusters. The SFN7142Q's CPU offload along with high performance enables servers to provide more services to more users in cloud and grid environments. SFN7142Q also accelerates database, social networking, email, and other storage-intensive applications with high bandwidth and low latency for SAN and NAS environments. SFN7142Q enables the lowest latency networking solutions for electronic/high frequency trading and other latency-sensitive applications.

Ultra-Low Latency

Flareon Ultra SFN7142Q supports PCIe 3.0 with ultra-low latency features such as direct packet transfer (Tx PIO) mode, which includes the templated send API. SFN7142Q reduces CPU load with hardware acceleration features that optimize packet delivery, such as UDP multicast replication, integrated layer 2 switching capability and VLAN insertion / removal, along with TCP segmentation offload (TSO).

Scalable, Hardware-Assisted Virtualization

With 10x the number of vNICs and virtual PCIe functions than the competition, SFN7142Q 40GbE server adapter's performance scales as the number of CPU cores and VMs increase, supporting more applications per physical server. SFN7142Q 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. 16 physical PCIe functions enable finer granularity and greater scalability when allocating Quality of Service (QoS) for optimized bandwidth utilization as I/O dynamically fluctuates.

Platform for Delivering Network Services

Flareon Ultra SFN7142Q 40GbE server adapter enables deploying servers for a wide range of applications with a single server adapter. SFN7142Q with AppFlex™ technology provides the flexibility to selectively add and control services such as network monitoring, precision time, security, and application acceleration to servers.



Flareon Ultra SFN7142Q

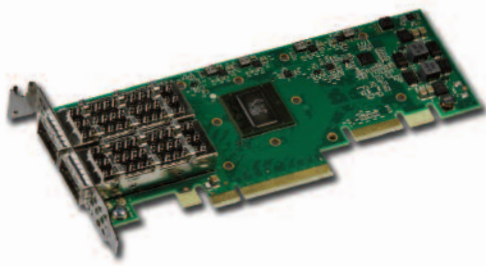
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Specifications

Product Number
SFN7142Q

Standards & Compliance

IEEE 802.3ba
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: 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 SFN7142Q
Dual-Port 40GbE QSFP+
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
SFS-PM
Performance Monitor License
SOLR-PPS-DP40G
40GbE 1PPS Cable Kit

Regulatory product code: SR200

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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

SFC9140 10/40G Ethernet Controller

Supports high-performance 40GbE and 10GbE

QSFP+ Support

Supports optical QSFP+ modules including Solarflare
SFM40G-SR4, Direct-Attach Copper, Solarflare QSFP+ to
SFP+ copper DAC cables (SOLR-QSFP2SFP-1M & -3M)

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 10GbE 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 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, 14.04 LTS, 14.10; other Linux; Windows
Server 2008 R2, 2012, 2012 R2; XenServer 6.2, 6.5

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