Flareon Ultra SFN8522 Server Adapter

Dual-Port 10GbE SFP+ PCIe 3.1

TAA COMPLIANT

The new Flareon™ Ultra SFN8500 adapter family provides Solarflare's best performance yet, with higher bandwidth, lower latency and higher packet rate. The SFN8500 family adapters are based on a common hardware platform, enabling customers to configure the features and performance they want to meet the particular needs of each application. Capabilities such as ultra-low latency, Onload kernel bypass, class leading clock synchronization accuracy providing MIFID II readiness, SolarSecure Filter Engine, SolarCapture and more can be enabled to run on any SFN8500 adapter on the network, making this the one Ethernet adapter to deploy across your data center or cloud infrastructure.

CPU-Efficient Networking

The Flareon Ultra SFN8522 dual-port 10G Ethernet SFP+ server adapter delivers faster, more efficient processing of network traffic to accelerate a wide range of applications. The SFN8522 has 8 lanes of PCIe 3.1 making it an ideal workhorse for 10GbE data center and cloud workloads, providing high bandwidth, high-packet rate and CPU-efficient processing of network traffic.

Configurable Software

When configured with Solarflare software licenses, the SFN8522 can address ultra-low latency applications, highly accurate clock synchronization and hardware time stamping, packet filtering, packet capture and more. Adapters can be purchased pre-configured with popular software bundles, or configured on-site with software options.

Ultra-Low Latency

The platform's hardware optimizes packet flow to and from the user application. When licensed for ultra-low latency, it delivers unrivaled sub-microsecond TCP and UDP latency. With Onload, the industry's best application-to-application performance is enabled via Solarflare's unique and patented kernel bypass techniques.

Accelerating Applications

The SFN8522 is ideal for scale-out cloud, web and CDN application environments. Solarflare adapters are used in a wide range of use cases, including Software-defined networking (SDN), Network functions virtualization (NFV), web content optimization, DNS acceleration, web firewalls, load balancing, NOSQL databases, caching tiers (Memcached), web proxies, video streaming and storage networks. The SFN8522 also provides the ideal link between fast NVMe storage and the network. In addition when used with Onload, the SFN8522 further reduces host processing overhead and accelerates web and cloud traffic. When used with SolarSecure Filter Engine, the SFN8522 provides an additional layer of defense against DDoS attacks at the network ingress point to the server. Attacks can be absorbed without degradation of "good" traffic, enabling a 3 to 4x improvement in packet-level filtering server headroom.*

Scalable, High-Performance Virtualization

Solarflare is the proven leader in VM density and performance, and the SFN8522 raises the bar with 2048 vNICs, SR-IOV, overlay network acceleration e.g. VXLAN, NVGRE. In addition, the SFN8522 supports kernel bypass running in a guest VM, so users can run ultralow latency Onload or SolarCapture in a virtualized or cloud environment.

The SFN8522 is also fully flow-aware, providing flexible layer 2-4 flow processing and flow steering natively. The benefits are efficient flow acceleration in almost every environment from the data center to the stock exchange.

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; 16 NIC partitions

PCI Express
• PCIe 3.1 x8 @ 8.0 GT/s

SFC9240 10G Ethernet Controller
• Supports high-performance 10GbE

SFP+ Support
• Supports optical SFP+ modules including Solarflare SFM10G-SR, Direct-Attach Copper, Active Optical Cables

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

Low Latency
• Cut-through architecture/intelligent interrupt coalescing

Packet Rate
• 30Mpps TX & RX sustained line rate with all packet sizes (15Mpps per port)

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

Hardware Offloads
• TSO, LRO, GSO, IPv4/IPv6 and TCP/UDP checksums

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

Remote Boot
• PXE; unattended installation; UEFI; Solarflare Secure Boot

Management
• SNMP, ACPI v3.0

Overlay Network Acceleration
• VXLAN, NVGRE, GENEVE

Switching Support
• Integrated Layer 2 Ethernet switch, VEB/Virtual switch

Virtualization Support
• VMware ESXi 5.x,6.0; Microsoft Hyper-V; Linux KVM

Operating Systems
• RHEL 6, 7, MRG; SLES 11, 12, SLERT; Debian 7.x, 8.x; Ubuntu 14.04 LTS, 14.10, 15.04; other Linux; Windows Server 2008 R2, 2012, 2012 R2

Specifications

Standards & Compliance
• IEEE802.3-2012 Ethernet Base Standard, including 802.3bx, 802.3bd, 802.3x
• 802.3ae (10 Gigabit Ethernet over fiber)
• 802.3z (1000BASE-X Gbit/s Ethernet over Fiber-Optic at 1Gbit/s (125 MB/s)
• 1000BASE-X
• 10GBASE-CR -SR -LR
• Dual SFP+ (SFF-8431 Rev 4.1) Connectors
• RoHS Compliant

Power
• 7.3W (typical)

Operating Range
• 0° to 55° C
• 200 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)

Ordering Information
• SFN8522
• SFN8522-G (TAA-Compliant)

For more information on SolarSecure Filter Engine, visit Solarflare.com/solarsecure

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