

## Product Brief

SFN5812H, SFN5814

# SFN5812H/5814H 10G Ethernet Mezzanine Adapters for IBM BladeCenter

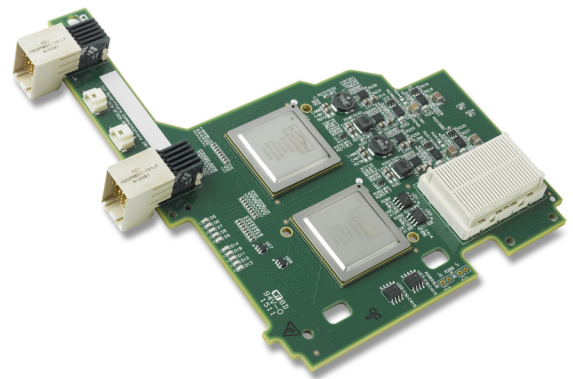
Solarflare® SFN5812H dual-port and SFN5814H quad-port 10G Ethernet mezzanine server adapters (CFFh form factor) deliver the industry's best application performance, lowest power consumption, and most scalable virtualization, enabling unmatched performance and scalability for IBM BladeCenter.

The SFN5812H/5814H server adapters enhance the benefits of IBM BladeCenter by reducing complexity and increasing performance. The server adapter family optimizes application networking performance in CFFh form-factor, supporting IBM's high-speed daughter card slot with HS22 blade servers in BladeCenter chassis. This product family provides unmatched performance scaling for high-density blade server deployment, supporting four 10GbE ports and two PCIe buses, while utilizing a single driver across all Solarflare server adapter products. The SFN5812H/5814H server adapters support data networking with concurrent support of iSCSI and NAS traffic.

### APPLICATION PERFORMANCE LEADERSHIP

The SFN5812H and SFN5814H are designed to optimize application performance and maximize the use of network resources, while minimizing CPU utilization, delivering the industry's lowest-latency and full 40 Gbps bidirectional line-rate performance. Featuring a rich set of stateless offloads, they both provide efficient acceleration of the most demanding network protocol tasks.

The SFN5812H and SFN5814H both support Solarflare's OpenOnload™ application accelerator, a high-performance user-level network middleware for Linux. OpenOnload bypasses kernel networking overheads further reducing latency and is binary compatible with standard APIs and applications.



### SCALABLE, HARDWARE-ASSISTED VIRTUALIZATION

The SFN5812H/5814H server adapters are designed to optimize virtualized application performance and maximize the use of network resources in leading hypervisors, including VMware™ and Hyper-V™. With an order of magnitude more vNICs and PCIe virtual functions than the competition, performance scales as the number of CPU cores and virtual machines increase for near-native bandwidth and enhanced manageability.

The SFN5812H/5814H server adapters also feature SR-IOV used to accelerate guest applications in XenServer and KVM environments. This relieves network I/O bottlenecks hidden in virtualized environments, allowing IT managers to allocate network resources directly to applications and enabling the best performance and lowest CPU utilization in virtualized servers.

### LOWEST POWER

At less than 2 watts per port, the SFN5812H/5814H server adapters consume less than half the power of the



leading competitors' products, and delivers 5-10x the efficiency of 1G Ethernet (Gbps/watt). This not only makes a power efficient 10G network possible, it can save thousands of dollars of operating costs for a typical

data center. The SFN5812H/5814H server adapters also conforms to the Energy Star™ recommendation of less than 8 watts/port power consumption.

SPECIFICATIONS	ADVANCED FEATURES AND BENEFITS	
<b>Product Number</b> SFN5812H Dual port 10GBASE-KX4 SFN5814H Quad port 10GBASE-KX4	Server compatibility	HS22 family of servers - HS22, HS22V
	Chassis compatibility	IBM BladeCenter E, H, S
<b>Standards and Compliance</b> PCIe 2.0 5.0 GT/s IEEE 802.3ap IEEE 802.3ad IEEE 802.3Q IEEE 802.3p IEEE 802.3x RoHS Compliant	I/O Virtualization	1024 guest OS protected vNICs per port; SR-IOV
	PCI Express	PCIe 2.0 @ 5.0 GT/s for full, 40 Gbps bi-directional bandwidth
	SFC9020 10G Ethernet Controller	Supports high-performance 10GbE
	10GBASE-KX4	Two or Four 10GBASE-KX4 ports for backplane transmission
	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	LSO, LRO; IPv4/IPv6; TCP, UDP checksums; NetQueue/VMQ
	Adapter teaming / Link aggregation	LACP for redundant links & increased bandwidth
	Enhanced tuning	Adaptive interrupt moderation
	IP flow filtering	Hardware directs packets based on IP, TCP, UDP headers
<b>Power (typical)</b> SFN5812H: 3.9W SFN5814H: 7.9W	Advanced Packet Filtering	256 multicast filters; 4096 VLANs/port; adaptive TCP/UDP/IP/MAC/VLAN/RSS filtering
	Jumbo frames	9000 byte MTU for performance
	Intel QuickData™	Uses host DMA engines to accelerate I/O
	Remote boot	PXE, iSCSI; unattended installation
<b>Operating Range</b> 0° to 55° C 0 LFM, Min.	Management	SNMP, ACPI v3.0
	Virtualization support	VMware ESX 3.5, vSphere 4.x, Hyper-V, Red Hat KVM, XenServer 5.x; SR-IOV
	OS Support	Windows Server 2003, 2008, Linux RHEL5/6; SLES10/11; Solaris 10
<b>Physical Dimensions</b> L: 13.7 cm (5.4 in) W: 15.9 cm (6.25 in) IBM CFFh form factor		

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