HOTLAVA SYSTEMS

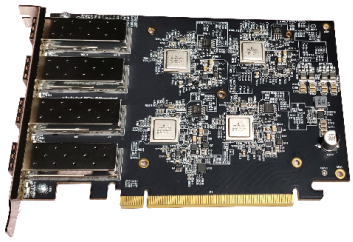
Rainier 25G

Product Line of Multi-Port 1/10/25 GbE Adapters

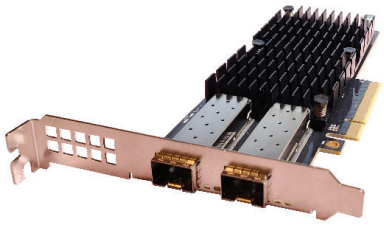
HotLava System's Broadcom-based multi-port, multi-controller 1/10/25 gigabit Ethernet NICs addresses the need for applications that require up to 25Gbps per port and greater physical port isolation

Rainier 25G4SS

- 4x25GbE SFP28 Ports
- 4 independent Broadcom BCM57412 controllers
- PCIe Gen3, x16 mechanical, 4x4x4x4 BIOS bifurcated



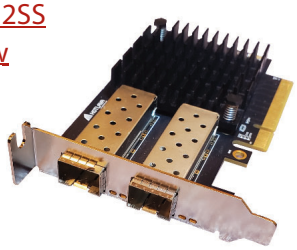
Rainier 25G4SS Top View



Rainier 25G4SS

- 2x25GbE SFP28 Ports
- 2 independent Broadcom BCM57412 controllers
- PCIe Gen3, x8 mechanical, 4x4 BIOS bifurcated

Rainier 25G2SS Top View



Rainier 25G2SB

- 2x25GbE SFP28 Ports
- 1 Broadcom BCM57414 controller
- PCIe Gen3, x8 mechanical

Highlights

- Broadcom BCM57412/14 Ethernet controllers and drivers
- TAA (Trade Agreement Act) Compliant
- Feature rich for virtualized systems
- Supports the following optical transceiver modules and direct attached cables:
  - 1000BASE-xx SFP
  - 10GBASE-xx SFP+
  - 25GBASE-xx SFP28
  - 1/10/25G passive DAC

FEATURES

- Broadcom BCM57412/14 Ethernet controllers and drivers
- SR-IOV with up to 128 VFs
- TruFlow™ intelligent flow processing engine
- RDMA over converged Ethernet (RoCE)
- SR-IOV for Direct Assignment
- VXLAN, NVGRE, Geneve, GRE encap/decap
- Advanced Congestion Avoidance

BENEFITS

- World class silicon and drivers that delivers energy-efficient performance and reliability
- Allows multiple virtual machines to access a single hardware device with minimal overhead with improved performance and lower CPU utilization
- Increases VM density by up to 50 percent, freeing up CPU cycles for additional virtual machines and accelerated vSwitch processing
- Allows RDMA functionality over an Ethernet network to reduce CPU utilization by providing direct memory access for applications
- Reduces CPU utilization and latency by enabling VMs to perform I/O directly to the physical network adapter, bypassing the hypervisor
- Allows VMs to communicate across different networks without having to configure the physical switches and routers
- Prevents the network from being overloaded by using a packet discarding policy that ensures high-priority services are preferentially processed based on the specified packet scheduling sequence

Product Specifications

Model	25G4SS	25G2SS	25G2SB
Number of ports	4	2	2
Slot Type	PCIe Gen3, x16 mechanical, x4x4x4x4 BIOS bifurcated	PCIe Gen3, x8 mechanical, x4x4 BIOS bifurcated	PCIe Gen3, x8 mechanical
Media Connector	SFP28	SFP28	SFP28
Board Dimensions	6.27 in x 4.38 in	6.31 in x 2.71 in	4.33 in x 2.71 in
Max Power Consumption	45 Watts, under maximum bidirectional 25GBASE-LR traffic load	21 Watts, under maximum bidirectional 25GBASE-LR traffic load	12 Watts, under maximum bidirectional 25GBASE-LR traffic load

Supported Operating Systems		
Windows Server 2016, 2019, 2022, 2025	RHEL 8.9, 8.10, 9.4, 9.5, and 9.6	vSphere/ESX 8.0 u3
Windows Client 10, 11	SuSE SLES 12 SP5, 15 SP5, and 15 SP6	FreeBSD 13.2, 13.3, 14.0, 14.1
	Ubuntu 22.04.4.LTS, 22.04.5, 24.04 LTS, and 24.04.1	

Features		
Virtualization	System I/O	
SR-IOV v1.0, up to 128 Virtual Functions	Jumbo Frames	Link Auto-negotiation
Linux KVM Multiqueue	RDMA over Converged Ethernet (RoCE)	Interrupt Aggregation
VMware NetQueue	Data Center Bridging (DCB)	MAC/VLAN Filters
NDIS Virtual Machine Queue (VMQ)	IEEE 802.1q VLAN	NIC Partitioning (NPAR)
Virtual eXtensible LAN (VXLAN)	VLAN Tagging	Alternate Routing ID (ARI)
Generic Routing Encapsulation (GRE)	IP Checksum Offload	Function Level Reset (FLR)
Network Virtualization using Generic Routing Encapsulation (NVGRE)	TCP and UDP Checksum Offload	Advanced Error Reporting
Generic Network Virtualization Encapsulation (Geneve)	TCP Segmentation Offload (TSO)	NDIS TCP Large Send Offload
Edge Virtual Bridging (EVB) (IEEE 802.1Qbg)	Large Receive Offload (LRO)	NDIS Receive Segment Coalescing (RSC)
MSI-X vector port, 74 per port default value	Receive Side Scaling (RSS)	Accelerated Receive Flow Steering (aRFS)
Enhanced Network Stack (ENS), LRO, RSS, Multi RSS	iSCSI, PXE, UEFI Boot	Header-Payload Split
	Priority Flow Control (IEEE 802.1Qbb)	Generic Receive Offload (GRO)
	Pause Flow Control (IEEE 802.3x)	PCIe ECNs

Environmental			
Operating Temp	0 to 55 °C with 150 LFM airflow	Operating Humidity	5 to 85% non-condensing
Storage Temp	-40 to 70 °C	Storage Humidity	0 to 85% non-condensing

Product Name / Model	Description / Maximum Unidirectional Aggregate Bandwidth	Part Number
Rainier 25G2SB	Dual-port 1/10/25GbE SFP28 NIC (50 Gbps)	2S738L0B1
Rainier 25G2SS	Dual-port 1/10/25GbE SFP28 NIC with 2 independent Ethernet controllers (50 Gbps)	2S738M3A1
Rainier 25G4SS	Quad-port 1/10/25GbE SFP28 NIC with 4 independent Ethernet controllers (100 Gbps)	4S73AM0A1

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