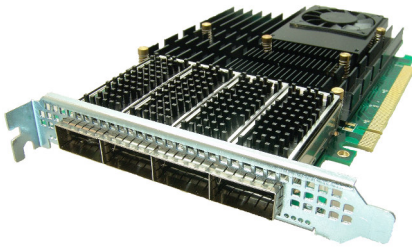


Product Line of Multi-Port 1/10/40 GbE Adapters

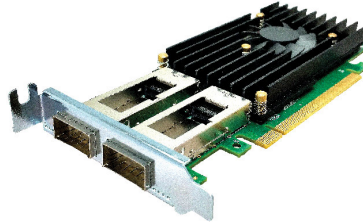
HotLava System's Intel-based multi-port 1/10/40 gigabit Ethernet NICs enables today's most powerful servers to deliver the maximum aggregate throughput from a single PCI Express slot. High port density and high bandwidth makes it ideal for space or slot constrained network appliances and storage servers.



St. Helens 200G4Q-XL

Configurable Modes:

- 2x40GbE + 2x40GbE
- 2x40GbE + 4x10GbE
- 4x10GbE + 4x10GbE



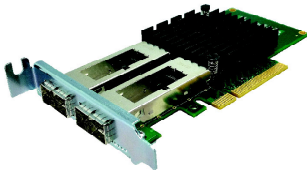
St. Helens 160G2Q-XL

Configurable Modes:

- 1x40GbE + 1x40GbE
- 1x40GbE + 4x10GbE
- 4x10GbE + 4x10GbE

Highlights

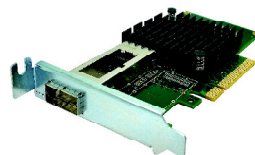
- Intel XL710 1/10G/40G Ethernet controllers and drivers
- Up to 100% more throughput than other x8 lane 40GbE adapters
- Configurable for 40G mode or 10G mode with breakout cable
- 40 to 100 Gbps of aggregate throughput
- Feature rich for virtualized systems
- Supports 40GBASE-SR4 and 40GBASE-LR4 transceivers



St. Helens 100G2Q-XL

Configurable Modes:

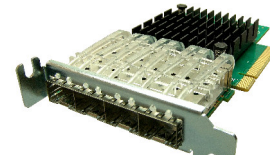
- 2x40GbE
- 4x10GbE



St. Helens 80G1Q-XL

Configurable Modes:

- 1x40GbE
- 4x10GbE



St. Helens 80G4S-XL

Operational Modes:

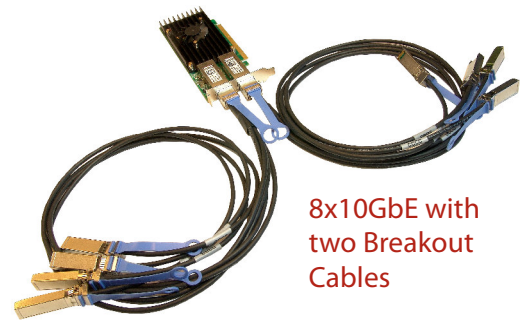
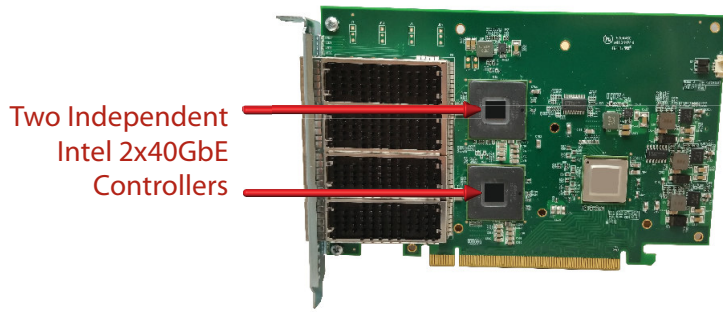
- 4x10GbE
- 4x1GbE (with dual-rate transceivers)

FEATURES

- Intel XL710 10G/40G Ethernet controllers and drivers
- x16 lane PCIe 3.0 connector
- Configurable as either 10G or 40G ports
- Converged Unified Networking
- SR-IOV for Direct Assignment
- VXLAN, NVGRE, Geneve, NSH Offloads
- Intel Ethernet Flow Director for hardware -based application traffic steering

BENEFITS

- World class silicon and drivers that delivers energy-efficient performance and reliability
- Up to twice the throughput of other x8 lane dual-port 40GbE NICs
- Provides the flexibility to function in 40G mode or 1G/10G mode with breakout cable
- Provides a Unified Networking platform to support single adapter/wire for LAN and storage
- 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
- Lowers latency and CPU utilization and increases bandwidth by automatically steering network data to the same core on which its application process resides



Product Specifications

	200G4Q-XL	160G2Q-XL	100G2Q-XL	80G1Q-XL	80G4S-XL
Number of ports	4	2	2	1	4
Slot Type	PCI-e 3.0, x16	PCI-e 3.0, x16	PCI-e 3.0, x8	PCI-e 3.0, x8	PCI-e 3.0, x8
Media Connector	QSFP+, or SFP+ with breakout cable	QSFP+, or SFP+ with breakout cable	QSFP+, or SFP+ with breakout cable	QSFP+, or SFP+ with breakout cable	SFP+
Dimensions	6.60 in x 4.38 in	6.60 in x 2.71 in	5.39 in x 2.71 in	5.39 in x 2.71 in	4.91 in x 2.71 in
Max Power	19W (4x40GBASE-CR4)	18W (2x40GBASE-CR4)	4W (2x40GBASE-CR4)	3.8W (1x40GBASE-CR4)	3.8W (4x10GBASE-CR)
Max Power	23W (4x40GBASE-SR4)	22W (2x40GBASE-SR4)	6W (2x40GBASE-SR4)	4.8W (1x40GBASE-SR4)	7.8W (4x10GBASE-SR)
Max Power	33W (4x40GBASE-LR4)	24W (2x40GBASE-LR4)	11W (2x40GBASE-LR4)	7.3W (1x40GBASE-LR4)	9.5W (4x10GBASE-LR)

Supported Operating Systems

Windows Server 2008 R2, x86-64; 2012, R2, x86-64	VMWare ESXi 5.5, 6.x; x86-64	UEFI 2.1, 2.3, x86-64	OS X 10.x (available soon with NICs from Small Tree Communications)
FreeBSD 9, 10, 11; x86-64, IA-32, IA-64	Linux 2.6.32/3.x; x86-64, IA-32, IA-64	Solaris	

Features

Virtualization	System I/O	Manageability	General
Next-Generation VMDq Queues, 256 max per device	Intel Flow Director, Application Traffic Steering	iSCSI remote boot	Adapter fault tolerance (AFT), Switch fault tolerance (SFT)
PC-SIG SR-IOV, 128 Virtual Functions (VF) per device	Data Plane Developer Kit (DPDK) optimized	Preboot eXecution Environment (PXE)	Adaptive load balancing (ALB)
Intel VTI for Directed I/O (VT-d)	Interrupt Moderation, MSI-X support	Watchdog Timer	802.1Qbg, Virtual Ethernet Port Aggregator (VEPA)
Virtual Machine Load Balancing (VLMB)	Receive-Side Scaling, Scalable I/O	SNMP and RMON Statistic Counters	802.3ad Link Aggregation
VXLAN, NVGRE, Geneve, Network Service Headers (NSH)	TCP and UDP Checksum, TSO, VMDq and RSS Offloads	Time Sync (IEEE 1588, 802.1as)	Fiber Channel over Ethernet (FCoE)
802.1q VLAN tagging, stripping, and packet filtering. Up to 4096 VLAN tags	802.3 2005 Flow Control	Intel PROSet Utility for Windows Device Manager	Data Center Bridging (DCB)

Environmental

Operating Temp	0 to 55 °C with 100 LFM airflow	Operating Humidity	5 to 85% non-condensing
Storage Temp	-40 to 70 °C	Storage Humidity	0 to 85% non-condensing
Hardware certifications	FCC A, CE, VCCI, EN300-386	RoHS 6 Compliant	Yes

Product Name / Model	Description / Maximum Unidirectional Aggregate Bandwidth	Part Number
St. Helens 80G4S-XL	Quad-port 1/10GbE SFP+ NIC (40 Gbps)	45638C0A1
St. Helens 80G1Q-XL	Single-port 40GbE QSFP+ NIC (40 Gbps)	1QF38C0A1
St. Helens 100G2Q-XL	Dual-port 40GbE QSFP+ NIC (50 Gbps)	2QF38D0A1
St. Helens 160G2Q-XL	Dual-port 40GbE QSFP+ NIC (80 Gbps)	2QF3AC0A1
St. Helens 200G4Q-XL	Quad-port 40GbE QSFP+ NIC (100 Gbps)	4QF3AD0A1