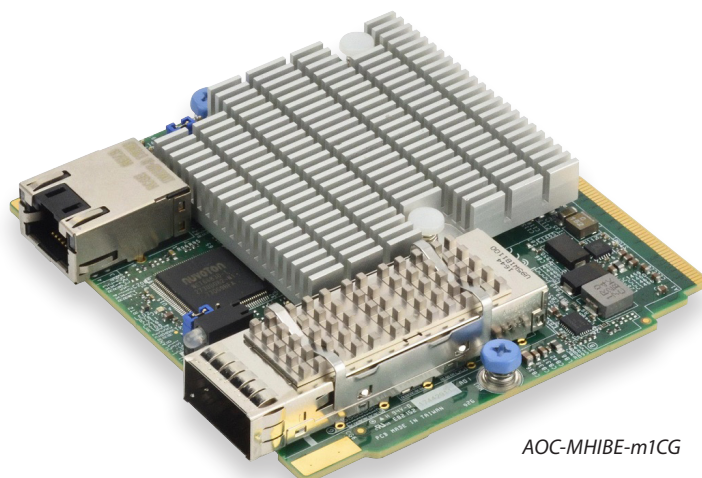


## The Ultimate InfiniBand Adapter in Supermicro Super I/O Module (SIOM) Form Factor

The AOC-MHIBE-m1CG is the most powerful InfiniBand controller in the market. In small form factor SIOM, it provides 100Gbps InfiniBand EDR or 100Gbps Ethernet for the fastest networking bandwidth in the market, as well as an additional Gigabit LAN controller for IPMI remote management. Based on Mellanox® ConnectX-4 VPI and Intel® i210, it provides the highest performing and most flexible interconnect solution for servers used in Enterprise Data Centers and High-Performance Computing.

### Key Features

- Super I/O Module (SIOM) Form Factor
- Mellanox® ConnectX-4 VPI InfiniBand EDR controller, Single QSFP28 Connector
- Up to 100Gbps InfiniBand or 100Gbps Ethernet
- Virtual Protocol Interconnect (VPI)
- VXLAN and NVGRE
- Intel® i210 GbE controller, Single RJ45 Connector
- NC-SI for Remote Management
- Asset Management Features with thermal sensor
- RoHS compliant 6/6



AOC-MHIBE-m1CG

### Specifications

#### General

- Super I/O Module (SIOM) Form Factor
- Mellanox® ConnectX-4 VPI EDR controller
  - Single QSFP28 port with speed up to 100Gbps per port
- Intel® i210 GbE controller
  - Single RJ45 port with speed up to 1Gbps per port

#### Cables Support

- InfiniBand EDR / 100GbE:
  - QSFP28 100Gbps Copper cable
  - Fiber optic cable (with required optional QSFP28 Optical transceiver)
- GbE: RJ45 Category 5/5e up to 100m

#### Power Consumption

- Maximum 19W

#### Operating Conditions

- Operating temperature: 0°C to 55°C (32°F to 131°F)
- Storage temperature: -40°C to 70°C (-40°F to 158°F)
- Storage humidity: 90% non-condensing relative humidity at 35°C

#### Physical Dimensions

- Card PCB dimensions: 92mm (3.62in) x 87.1mm (3.43in) (W x D)

#### Supported Platforms:

- Supermicro® motherboards with Super I/O Module slot
- Supermicro® server systems with Super I/O Module slot (See SIOM Compatibility Matrix online)
  - [http://www.supermicro.com/support/resources/AOC/AOC\\_Compatibility\\_SIOM.cfm](http://www.supermicro.com/support/resources/AOC/AOC_Compatibility_SIOM.cfm)

*Please note that this product is sold only as part of an integrated solution with Supermicro server systems*

### InfiniBand EDR QSFP28 Specifications

Mellanox® ConnectX-4 VPI EDR controller with Single QSFP28 port and speed up to 100Gbps.

#### InfiniBand

- IBTA Specification 1.3 compliant
- Hardware-based congestion control
- 256 to 4Kbyte MTU, 2GB messages

#### Enhanced Features

- Hardware-based reliable transport
- Collective operations offloads
- Mellanox PeerDirect™ RDMA communication acceleration
- Extended Reliable Connected transport
- Enhanced Atomic operations

#### Ethernet

- IEEE 802.3bj, 802.3bm 100 Gigabit Ethernet
- IEEE 802.3az Energy Efficient Ethernet
- IEEE 802.3ad, 802.1AX Link Aggregation
- IEEE 1588v2
- Jumbo frame support (9.6KB)

#### Overlay Networks

- Hardware offload of encapsulation and decapsulation of NVGRE and VXLAN overlay networks

#### Hardware-based I/O Virtualization

- Single Root IOV
- Multi-function per port
- Address translation and protection
- Multiple queues per virtual machine
- Enhanced QoS for vNICs
- VMware NetQueue support

#### Virtualization

- SR-IOV: Up to 256 Virtual Functions
- SR-IOV: Up to 16 Physical Functions per port

## InfiniBand EDR QSFP28 Specifications continued...

### CPU Offloads

- RDMA over Converged Ethernet (RoCE)
- TCP/UDP/IP stateless offload
- LSO, LRO, checksum offload
- Intelligent interrupt coalescence

### Remote Boot

- Remote boot over InfiniBand
- Remote boot over Ethernet
- Remote boot over iSCSI
- PXE and UEFI

### Protocol Support

- OpenMPI, IBM PE, OSU MPI (MVAPICH/2), Intel MPI,
- Platform MPI, UPC, Mellanox SHMEM
- TCP/UDP, EoIB, IPoIB, SDP, RDS, MPLS, VxLAN, NVGRE, GENEVE
- SRP, iSER, NFS RDMA, SMB Direct
- uDAPL

### Operating System Support

- Linux
- Windows
- FreeBSD
- VMware

## GbE RJ45 Specifications

Intel® i210 GbE controller with Single RJ45 port and speed up to 1Gbps.

### Performance and Efficiency Features

- Energy Efficient Ethernet (EEE)
- Jumbo Frames support
- TCP/UDP, IPv4 checksum offloads
- IPv6 support for IP/TCP and IP/UDP receive checksum offload
- Low Latency Interrupts

### Manageability Features

- NC-SI

### Operating System Support

- Linux
- Windows
- FreeBSD
- VMware

## Available SKUs

SKUs	Part Number	Description
AOC-MHIBE-m1CG	AOC-MHIBE-m1CG	1-port IB EDR Adapter
	BKT-0142L	Swappable bracket for 2U+ chassis
AOC-MHIBE-m1CGM	AOC-MHIBE-m1CGM	1-port IB EDR Adapter
	BKT-0141L	Internal bracket

## Similar Products

Product Part Number	Form Factor	Speed	Connector Type	Total Ports	Chipset
AOC-MGP-i2	SIOM	1GbE	RJ45	2	Intel® i350
AOC-MGP-i4	SIOM	1GbE	RJ45	4	Intel® i350
AOC-MTGN-i2S	SIOM	10GbE	SFP+	2	Intel® 82599
AOC-MTG-i4S	SIOM	10GbE	SFP+	4	Intel® XL710
AOC-MTG-i2T	SIOM	10GbE	RJ45	2	Intel® X550
AOC-MTG-i4T	SIOM	10GbE	RJ45	4	Intel® X550
AOC-MH25G-m2S2G	SIOM	25GbE	SFP28	2	Mellanox® CX4 Lx EN
		10GbE	RJ45	2	Intel® X550
AOC-M25G-m4S	SIOM	25GbE	SFP28	4	Mellanox® CX4 Lx EN
AOC-MHIBF-m2Q2G	SIOM	InfiniBand FDR	QSFP	2	Mellanox® ConnectX-3 Pro
		GbE	RJ45	2	Intel® i350
AOC-MHIBF-m1Q2G	SIOM	InfiniBand FDR	QSFP	1	Mellanox® ConnectX-3 Pro
	SIOM	GbE	RJ45	2	Intel® i350
AOC-MHFI-i1C	SIOM	Omni-Path	QSFP28	1	Intel® OP HFI ASIC

## Optional Parts list

SKUs	Part Number	Description
QSFP28 Copper cable	CBL-NTWK-0942-MQ28C10M	1m Ethernet 100GbE QSFP28
QSFP28 Copper cable	CBL-NTWK-0942-MQ28C20M	2m Ethernet 100GbE QSFP28
QSFP28 Copper cable	CBL-NTWK-0942-MQ28C30M	3m Ethernet 100GbE QSFP28
QSFP28 Copper cable	CBL-NTWK-0942-MQ28E10M	1m InfiniBand EDR QSFP28
QSFP28 Copper cable	CBL-NTWK-0942-MQ28E20M	2m InfiniBand EDR QSFP28
QSFP28 Copper cable	CBL-NTWK-0942-MQ28E30M	3m InfiniBand EDR QSFP28