AOC-S400G-B1C

The AOC-S400G-B1C is based on the Broadcom BCM57608 Ethernet Controller and offers a 1x400G-capable network interface that delivers high-performance networking while maintaining low power consumption and thermal efficiency.

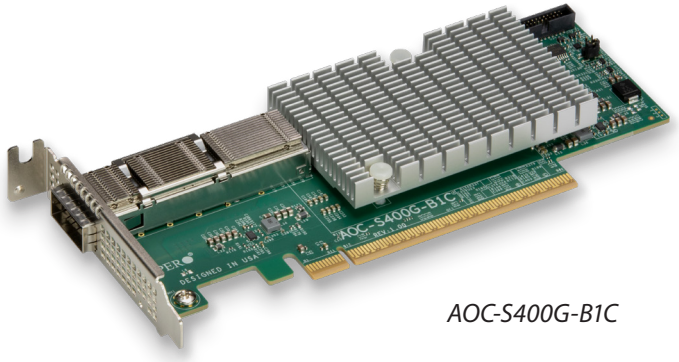
The BCM57608 series supports the fourth generation of RDMA over Converged Ethernet (RoCE) with hardware-based congestion control. This technology ensures low latency and simplifies RoCE deployment at scale. Furthermore, the BCM57608 features the TruFlow™ engine, a hardware acceleration engine with enhanced programmability. This engine allows for rapid implementation of new flow types, increasing virtual machine density and improving application performance.

The BCM57608 supports industry-leading security features, including Broadcom's HW Secure Boot (RoT) and Attestation support. These security measures enable the creation of secure server platforms.

In summary, the BCM57608 series Ethernet Controllers are versatile and can be used in a wide range of hardware designs, including cloud and enterprise data center servers, AI and ML clusters, NVMe storage disaggregation, 5G Wireless RAN, Network Function Virtualization (NFV), mobile edge computing, and HPC environments.

Key Features

- **Broadcom® BCM57608 1x400GbE controller**
- **PCIe Gen 5.0 x16 low-profile standard form factor**
- **Single QSFP-DD connector**
- **Support for 400/200/100/50/25/10GbE**
- **RDMA over Converged Ethernet (RoCEv2)**
- **VXLAN, NVGRE and Geneve**
- **NIC Partitioning (NPAR)**
- **Broadcom® TruFlow™ flow processing engine**
- **Asset Management Features with thermal sensor**
- **NC-SI for Remote Management (not supported by default)**
- **RoHS compliant 6/6**



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Specifications

- **Networking Interface:**
  - 8 SerDes capable of 100/50G PAM4 and 25G NRZ
  - QSFP-DD
  - 1x400GbE, 1x200/100/50/25/10GbE
  - Auto-negotiation with auto-detect
  - IEEE-1588v2
  - IEEE 802.3x flow control
  - IEEE 802.3ad Link Aggregation
  - Virtual LANs- 802.1q VLAN tagging
  - Configurable Flow Acceleration
  - UEFI and iSCSI boot
- **Platform Security Features:**
  - HW Secure Boot (RoT)
  - Attestation (SPDM)
- **Manageability Features:**
  - Network Controller Sideband Interface (NC-SI)
  - Platform Level Data Model (PLDM) for Monitoring and FW Update
- **Stateless Offload Features:**
  - TCP, UDP and IP checksum offloads
  - IPv4 and IPv6 offloads
  - Receive Segment Coalescing
  - TTCP Segmentation Offload
  - Large Receive Offload (LRO)
  - Large Send Offload (LSO)
  - Receive Side Scaling (RSS)
  - Transmit Side Scaling (TSS)
- **NIC Partitioning (NPAR):**
  - 16 Physical Functions
  - QoS per partition
  - Partitioning control via sideband communication
  - Up to 64 MAC/VLAN filter per partition
  - Per partition statistics support
  - Stateless offloads configuration per partition
  - VEB/VEPA support
- **Virtualization Features:**
  - NetQueue, VMQueue, and Multi-queue
  - SR-IOV with up to 128 Virtual Functions (VFs)
  - VXLAN, NVGRE, GRE, Geneve and IP-in-IP
  - Edge Virtual Bridging (EVB)
- **RDMA over Converged Ethernet (RoCE):**
  - RoCEv1 and RoCEv2
  - Data Center Bridging with RoCE
- **TruFlow™ Flow Processing:**
  - Exact/Wildcard Match Flow Lookup
  - VLAN insertion/deletion
  - NAT/NAPT/Mirroring
- **Data Center Bridging:**
  - Priority-based flow control (PFC; IEEE 802.1Qbb)
  - Enhanced transmission selection (ETS; IEEE 802.1Qau)
  - Quantized Congestion Notification (QCN; IEEE 802.1Qau)
  - Data Center Bridging Capability eXchange (DCBX; IEEE 802.1Qaz)
  - 8 traffic classes per port; fully DCB compliant per 802.1Qbb
- **Power Savings:**
  - ACPI compliant power management
  - Pass-through Energy Efficient Ethernet (IEEE 802.3az-2010)
- **Power Consumption:**
  - Typical 19 W
  - Max 25.4 W (at 100°C)
- **Environmental Conditions:**
  - 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: 167.64 mm (6.60 inch) x 68.91 mm (2.713 inch) (L x W)

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