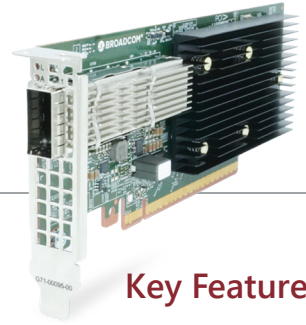


# ANC400QP Series

## PCI-Express 400 Gigabit Network Adapters



### Key Features

The Allied Telesis ANC400QP PCIe 5.0 Ethernet controller is designed to support high temperature environments that require direct liquid cooling (DLC), such as GPU server networking and artificial intelligence (AI) data centers. This NIC adapter inherits all the features of a standard 400G NIC product, making it ideal for any application that requires a high-performance, feature-rich Ethernet NIC adapter.

#### Hardware Acceleration

With its market-leading hardware acceleration technologies, the ANC400QP Series PCIe 5.0 Ethernet controller addresses these performance and service demands of megascale data center networks with high throughput and advanced flow processing. Features such as TruFlow™ increase VM density up to 50 percent, freeing more CPU cycles for additional virtual machines. On-chip tunneling protocol processing for Geneve, VXLAN, and NVGRE provides up to a 5X throughput increase while lowering CPU utilization up to 90 percent compared to software-only solutions. NetXtreme®-E Series solutions also support advanced networking technologies such as RoCE, SDN and NFV, to facilitate the management of data networks and to enable service provider solutions.

#### Optimized for virtualization

Using 400G cards in virtualized environments is critical to the application in order to provide the data connectivity needed for the workloads in virtual machines. Due to specific slot limitations, it is recommended that virtualized servers use 100 Gigabit or higher ports to satisfy the I/O demands.

#### Superior functionality

The ANC400QP features TruFlow™, RDMA over Converged Ethernet (RoCE), Data Center Bridging (DCB), Single Root I/O Virtualization (SR-IOV), Stateless Offloads, and Congestion Avoidance.

#### More bandwidth with PCIe

The PCI-Express (PCIe) design provides the maximum possible bandwidth and bus efficiency. Other benefits include capability and low power consumption.

#### Performance and reliability

Allied Telesis validates its Network Adapters over a variety of operating systems and platforms, ensuring compatibility. The ANC400QP takes full advantage of the PCIeExpress bus architecture to maximize network throughput. Teaming enables Smart Load Balancing (SLB), which helps increase throughput and fault tolerance when multiple adapters are configured to share traffic and provide data reliability with failover.

#### NIC Partitioning

The ANC400QP provides an unprecedented level of governance across the entire network, enabling detailed tests, analysis, and diagnostics for each network adapter installed in the system. It includes utilities to help configure VLANs and set up teams for link aggregation, SLB, failover, and more.

The ANC400QP includes a comprehensive Microsoft Windows utility which performs detailed tests, diagnostics and analysis.

#### RoCE

The ANC400QP hardware supports RoCEv2 & RoCEv1 simultaneously. RoCE is a protocol that allows Remote Direct Memory Access (RDMA) traffic to be communicated over ethernet. With Broadcom's smart Congestion Control, RoCEv2 can be enabled without DCB.

#### Network Interface

- 8 SerDes capable of 100/50G PAM4 and 25G NRZ
- QSFP-DD 112 support
- Single-port 400/200/100/50/25G
- 400Gb/s total bandwidth
- Auto-negotiation with auto-detect
- IEEE-1588v2

#### Host Interface

- 16 lanes of PCI Express 5.0
- Link rates: 32, 16, 8, 5, 2.5 GT/s
- Lane configuration: x16
- MSI-X support

#### Platform Security

- HW Secure Boot (RoT)
- Attestation (SPDM)
- OCP Secure Recovery
- Secure Wipe and Restore
- OCP Silver Security Badge

#### RoCEv2

- Standards-based
- DCQCN
- Peer Memory Direct
- Smart Congestion Control: DCN and SARA
- Automated Configuration

#### Networking/Virtualizations and Accelerations

- RoCEv2
- Multi-Queue, NetQueue, and VMQ
- Single Root I/O Virtualization
- VF isolation and protection
- VXLAN, GRE, NVGRE, Geneve, and IP-in-IP
- Tunnel-aware stateless off-loads
- Edge Virtual Bridging (EVB)
- Stateless TCP offloads: IP/TCP/UDP checksum, LSO,LRO, GRO, TSS, RSS, aRFS, Interrupt coalescing
- kTLS hardware offload encryption/decryption support
- QUIC hardware offload encryption/decryption support

# SPECIFICATIONS

## Bus Type

PCIe x 16

IEEE 802.3x Flow control auto-negotiation  
 IEEE 802.3ad Link aggregation  
 IEEE 802.1Qaz Enhance Transmission Selection (ETC)  
 IEEE 802.1Qbb PFC  
 IEEE 801.1Qau Quantized Congestion Notification (QCN)

Ships with low-profile bracket attached to interface card.  
 Standard bracket included in packaging.

## Connectors

QSFP112 or QSFP122-DD SFP  
 QSFP112 or QSFP122-DD DAC  
 QSFP112 or QSFP122-DD AOC

## Compliance

CE-UE EN IEC 62368-1:2020 +A11:2020  
 UL/USA IEC 62368-1 (ed. 2)  
 CE/EU EN 55032:2015 +AC:2016, Class A  
 EN 55024:2010 +A1:2015  
 EN 55035  
 EN 61000-3-2:2014  
 EN 61000-3-3:2013  
 CE report and CE DoC  
 FCC/USA CFR47 Part 15 Subpart B Class A  
 FCC SDoC and EMC report referencing FCC standards  
 IC/Canada ICES-003 Class A Report referencing IC standards.  
 ACA/Australia, New Zealand AS/NZS CISPR 32:2015, Class A ACA certificate  
 BSMI/Taiwan CNS 15936:2016 BSMI certificate BSMI/  
 Taiwan CNS 15663 BSMI certificate/RoHS table KC/  
 S.Korea KN32 Class A  
 KN35  
 Korea certificate  
 KC mark  
 5.3 Electrostatic Discharge (ESD) Compliance  
 5.4 VCCI – Japan  
 5.5 Taiwan BSMI

## Network Type

25/50/100/200/400G

## Speed

25/50/100/200/400G

## Management Features

WMI  
 ACPI 1.1  
 PXE 2.1 Boot ROM  
 SNMP  
 UEFI Network Boot

## Compatible with Drivers:

Windows 11  
 Windows Server 2022  
 Windows Server 2025  
 Linux  
 Ubuntu  
 Debian

## Status Indicators

LED, for QSFP+ slots  
 Left LED (Link)  
 Right LED (Activity)

## Environmental Specifications

Operating temperature 0°C to 55°C (32°F to 131°F)  
 Storage humidity 10% to 90% (non-condensing)  
 Storage temperature -40°C to 70°C (-40°F to 158°F)

## Physical Characteristics

Dimensions (L x W x H) 16.7 cm x 6.5 cm x 1.4 cm  
 (6.57 in x 2.56 in x 0.55 in)  
 Weight 107.7 g (3.8 oz)

## Adapter Power Consumption<sup>1</sup>

Typical Power <sup>2</sup>	Passive DAC Cable	Linear-Drive Pluggable Optics (LPO) <sup>3</sup>	Active Optical Cable (AOC) <sup>3</sup>
50% Ethernet traffic	13.3W	16.0W	22.0W
100% Ethernet traffic	13.5W	16.2W	22.3W

<sup>1</sup> The adapter can support up to a 12W optic per connector. Using higher power optics than used in data collected for table 3. Evaluate these requirements and adjust system parameters accordingly.

<sup>2</sup> Power consumption of adapter at 35°C ambient temperature; T<sub>j</sub>=40°C; Nominal silicon process.

<sup>3</sup> Power consumption a typical 3W LPO QSFP 112 and an 8W QSFP-DD 56 transceiver.

# ORDERING INFORMATION

<b>AT-ANC400QP-900</b>	PCIe 400 Gig SFP28 Network Interface Card, TAA <sup>4</sup>
------------------------	---

<sup>4</sup> Trade Act Agreement compliant (TAA)

## Accessories

400G Modules	
AT-QSFPDD-SR8	400G, SR4 (MPO), Multi-Mode, 100m
AT-QSFPDD-FR4	400G, LR4 (LC), Single-Mode, 2km
AT-QSFPDD-1CU	1 Meter Direct Attach Cables
AT-QSFPDD-2.5CU	2.5 Meter Direct Attach Cables