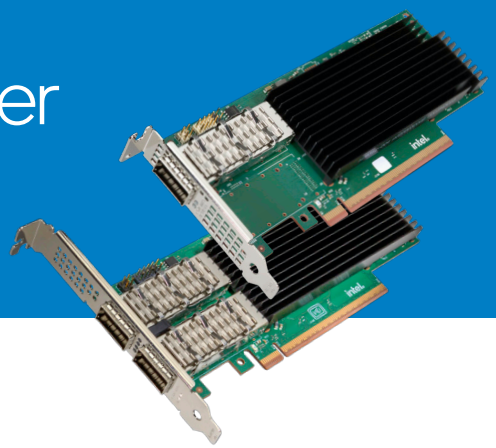
Product Brief
Intel® Ethernet 800 Series

Intel® Ethernet Network Adapter E835-CCQDA1/CQDA2



At-a-glance

- Speeds up to 200GbE
- PCIe 5.0 x8 or PCIe 4.0 x16
- Up to 200GbE Remote Direct Memory Access (RDMA)
- Multiple port configurations possible with EPCT
- Dynamic Device Personalization (DDP)
- Data Plane Development Kit (DPDK) enabled
- IEEE 1588 Precision Time Protocol v2
- Precision Time Measurement (PTM) v1.0a
- Commercial National Security Algorithm (CNSA) 1.0 compliant
- Modern security with signed firmware, secure boot, and hardware root of trust (RoT)

Overview

200GbE, Intel® Ethernet 800 Series E835 network adapters support the growing bandwidth demands of modern networks, especially for cloud services, virtualized environments, and large data transfers.

The low-power design reduces energy consumption across the system lowering costs and environmental impact, while addressing increasingly important power density challenges.

Concurrent support for iWARP and RoCEv2 RDMA, modern security features, key timing protocols, and fast data exchange, make 200GbE E835 network adapters an optimal choice for critical applications. These standards-based adapters deliver performance without the complexity and high cost of proprietary technologies.

Deployment is made easier through shared drivers for all 800 Series Network Adapter families (E835, E830 and E810), ensuring software consistency across generations of products.

These 200GbE adapters also offer multiple port configurations, providing relief for port-constrained networks using the available Ethernet Port Configuration Tool (EPCT).

Optimized for Intel® Xeon® processors

Data centers and workloads need computing capacity and powerful ways to move data securely. Intel® architecture offers both. Deployment-ready, reliable, and affordable, Intel Ethernet E835 Network Adapters are the perfect choice for amplifying server performance with Intel® Xeon® 6 processors.

Why Intel® Ethernet

Intel Ethernet Network Adapters offer best-in-class compatibility, performance assurance, and world-class customer support. Key features and technologies deliver outstanding performance and support for data center workloads.

Compatibility and interoperability

- Extensive conformance testing to IEEE and Ethernet Technology Consortium standards
- Broad network interoperability testing for best-in-class compatibility

Performance assurance

- Validated on all x86 architectures and optimized for Intel® architecture
- Security protocols and management to ensure data integrity
- Scales with processor cores and technologies

Worldwide product support

- Industry-leading warranty
- World-class customer pre- and post-product support
- Adherence to regulatory and environmental requirements

200GbE Intel® Ethernet E835 Network Adapters offer these key features:

RDMA

All 800 Series E835 network adapters support RoCEv2 and iWARP protocols, and for added flexibility, these protocols can run concurrently.

Ethernet Port Configuration Tool (EPCT)

200GbE E835 network adapters have multiple port configurations to choose from. After the initial adapter validation, 200GbE E835 network adapters with EPCT offer a quick two-step process to change configurations: select the new configuration and reboot. No additional validations are required.

Dual-port Configuration Options

Port 1	Port 2
1x200	-
1x100	1x100
4x50	-
4x25	4x25
2x50	2x50

Single-port Configuration Options

Port 1
1x200
2x100
4x50

Programmable Pipeline / Dynamic Device Personalization (DDP)

DDP improves packet processing performance by using the E835 controller's programmable pipeline rather than the CPU to classify frames. DDP increases throughput, lowers latency, and reduces host CPU overhead in both network functions virtualization (NFV) workloads and cloud-native architectures.

Open vSwitch (OVS) Acceleration

800 Series network adapters are DPDK enabled to deliver faster NFV, advanced packet forwarding, and efficient packet processing, resulting in more effective CPU utilization and reduced overhead.

Data Plane Development Kit (DPDK)

The E835 is optimized for Intel® Xeon® processors to minimize packet parsing overhead and flow table search. DPDK integration with OVS increases performance by eliminating extra layers in the architecture and native OVS stack.

Precision Time Synchronization and Measurement

Intel® Ethernet E835 Network Adapters enable service providers to build open, disaggregated vRAN solutions with off-the-shelf components to meet unique customer needs, including system size and budget.

- Compliant with IEEE 1588 Precision Time Protocol (PTP) v2.
- Supports Precision Time Measurement (PTM) v1.0a, a protocol used to synchronize a CPU with other devices in a server platform, such as E835 network adapters. Applications that benefit from PTM sub-microsecond timing accuracy include financial services, network monitoring, and distributed database systems.

Manageability

Broad system manageability capabilities using the latest DTMF (Distributed Management Task Force) protocols.

- MCTP over SMBus 2.0 and PCIe VDM (Vendor Defined Messages).
- NC-SI 1.2 protocol compliance. Transport options include NC-SI over MCTP.
- PLDM over MCTP with an extended list of message types, including PLDM command types T2, T4, T5, and T6.

Modern Standards-based Security

Intel offers modern standards-based cryptographic security anchored by a hardware Root of Trust (RoT).

- Signed SPDM and device attestation in compliance with Security Protocol and Data Model (SPDM) 1.1.2.
- Silicon Root of Trust (RoT) compliant with NIST SP 800-193 platform firmware resiliency guidelines.
- Meets FIPS 140-3 level 1 requirements.
- Secure Boot isolates sensitive parameters and keys used for boot and operation.
- Secure Firmware Update verifies digital signatures of new firmware binaries.
- Recovery Mode Failsafe mode is activated upon detection of abnormal device operation.

Adapter Features

Data Rate Supported	200/100/50/25/10GbE
Bus Type/Bus Width	PCIe 5.0 x8 or 4.0 x16
Form Factor	Standard PCIe; ships with both low-profile and full-height brackets
Controller	Intel® Ethernet Controller E835
Hardware Certifications	BSMI, CE, CMIM, FCC, ICES, KCC, RCM, UKCA, cURus, and VCCI
Compliance	RoHS and BMSI RoHS compliant. Product is compliant with Taiwan Bureau of Standards, Metrology and Inspection (BMSI) and EU RoHS Directive 2 2011/65/EU (Directive 2011/65/EU) and its amendments.

Technical Specifications

Storage Humidity	Maximum: 90% non-condensing relative humidity at 35 °C
Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
Operating Temperature	0 °C to 65 °C (32 °F to 149 °F)
LED Indicators	ACTIVITY (blinking) NO ACTIVITY (off) LINK SPEED (green = Max Speed; amber = less than Max; off = no link)

Ethernet Media Supported

100GbE QSFP28 – 2 Ports

100GBASE-CR4, 100GBASE-SR4, 100GBASE-LR4, 100GBASE-FR, 100GBASE-DR, 100GBASE-PSM4 (Optical Breakout)

200GbE QSFP56 – 1 Port*

200GBASE-CR4, 200GBASE-SR4, 200GBASE-LR4, 200GBASE-FR4

50GbE SFP56 – Up to 4 ports with breakout cables

50GBASE-CR, 50GBASE-LR, 50GBASE-SR

25GbE SFP28 – Up to 8 ports with breakout cables (4 ports per cage)

25GBASE-CR (802.3by 25G twinax), 25GBASE-CR1 (Consortium 25G twinax), 25GBASE-SR, 25GBASE-LR, 25G-AUI C2M, CA-25G-N (DA Breakout), CA-25G-S (DA Breakout), CA-25G-L (DA Breakout)

10GbE SFP+ – Up to 8 ports using breakout cables (4 ports per cage)

10Gb SFI-DAC (SFP+ twinax); 10Gb SFI Limiting (SFP+ optics/AOC)

*For the dual port adapter, use only Port 1 to configure the adapter as a single 200GbE port; using this configuration, Port 2 will not have connectivity.

Supported Operating Systems

For a complete list of supported network operating systems for Intel® Ethernet 800 Series Network Adapters visit: intel.com/support/EthernetOS

Power Consumption

	Typical Power	
1 Port, E810-CCQDA1	DACs	Optics*
1x200Gb Traffic	11.52 W	16.9 W
1x200Gb Idle (no traffic)	11.33 W	16.1 W

2 Port, E810-CQDA2	DACs	Optics*
2x100Gb Traffic	13.27 W	21.48 W
2x100Gb Idle (no traffic)	10.35 W	18.2 W
1x200Gb Traffic	11.52 W	16.9 W
1x200Gb Idle (no traffic)	11.33 W	16.1 W

*100GbE Optics measured with 3.5 W load modules; 200GbE Optics measured with 7 W load modules

Product Order Code

Configuration	Product Code
1 Port	E835CCQDA1
	E835CCQDA1M (five pack)
2 Port	E835CQDA2
	E835CQDA2M (five pack)

Warranty

Intel limited lifetime hardware warranty, 90-day money-back guarantee (US and Canada) and worldwide support. Visit: Intel® Terms and Conditions of Warranty, Support and Services

Customer Support

For customer support options in North America visit: intel.com/content/www/us/en/support/contact-support.html

Product Information

For information about Intel® Ethernet Products and technologies visit: intel.com/ethernet

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