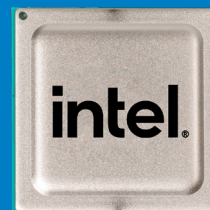


Intel® Ethernet Controller E835

Predictable performance without the technical complexity and high cost of proprietary technologies.



At-a-glance

- Speeds up to 200GbE
- PCIe 5.0 x8 or 4.0 x16
- Autonegotiation between port speeds 200/100/50/25/10
- Commercial and extended operating temperature SKUs
- Remote Direct Memory Access (RDMA) up to 200GbE
- Integrated SyncE, PTP and PTM
- Open vSwitch with DPDK optimization
- SPDM-based device attestation, Secure Boot, Secure Firmware Update, and FIPS-aligned cryptographic capabilities
- Dynamic Device Personalization

Overview

With one of the broadest port-density and speed-combination offerings in the market today, Intel® Ethernet E835 controllers are ideal for mixed-speed legacy environments and for transitioning between speed generations. Driver compatibility for 800 Series Controllers (E835, E830, and E810) reduces data center disruptions and ensures software consistency across product generations.

Flexibility for port-constrained networks

200Gb and 100Gb E835 controllers, with up to four user-selected Ethernet port configurations, offer flexibility for port-constrained networks. Common port and speed configurations are validated, helping customers avoid misconfiguration and accelerate successful deployment.

Support designed in

Designed to deliver a predictable, “it just works” experience from day one—move from installation to production quickly and confidently. E835 controllers implement a design approach that emphasizes observability, clear error surfaces, and predictable resolution. Integrated diagnostics, standardized firmware and driver releases, and defined lifecycle support help customers resolve issues efficiently.

Natural companion for Intel® Xeon® platforms

E835 controllers are validated alongside Intel Xeon platforms to help deliver balanced bandwidth-per-core and predictable latency, and to simplify system integration—supporting customers who standardize on Intel platforms for performance, operability, and long-term flexibility.

Why Intel® Ethernet

Intel Ethernet products are designed to integrate seamlessly into existing environments. Extensive validation and global support help customers deploy with confidence and operate at scale.

Compatibility and interoperability

- Extensive conformance testing to IEEE and Ethernet Technology Consortium standards
- Comprehensive operating system and hypervisor support
- Broad network interoperability testing for best-in-class compatibility

Predictable performance

- Validated across a broad range of server platforms
- Security protocols and management to ensure data integrity
- Scales with processor cores and technologies

Outstanding product support

- Integrated diagnostics
- Defined lifecycle support
- Global customer pre- and post-product support
- Adherence to regulatory and environmental requirements

Intel® Ethernet E835 Controllers offer these key features:

Remote Direct Memory Access (RDMA)

RDMA throughput scales with the configured link speed(s), up to 200GbE aggregate depending on port configuration, platform, and workload. Intel Ethernet E835 Controllers support both RoCEv2 and iWARP.

RDMA RocEv2 Link Aggregation Group (LAG)¹ supports active/active and active/backup data paths to aggregate bandwidth and provide high availability. By load-balancing RDMA traffic across multiple physical links, LAG improves resiliency, reduces congestion, and maintains consistent low-latency performance for storage and compute workloads.

Programmable Pipeline / Dynamic Device Personalization (DDP)

DDP improves packet processing performance by using the E835 controller's programmable pipeline to classify frames. This can increase throughput, lower latency, and reduce host CPU overhead in NFV workloads and cloud-native architectures, depending on configuration and workload.

Data Plane Development Kit (DPDK)

DPDK-enabled deployments can deliver faster packet processing and more efficient use of CPU cycles for NFV and advanced forwarding use cases. Performance depends on platform tuning, configuration, and workload.

Precision Time Synchronization and Measurement

Growth in 5G RAN and edge deployments is driving demand for high-precision timing synchronization across the network. Intel Ethernet E835 controllers enable open, disaggregated solutions with integrated timing capabilities, including.

- Synchronous Ethernet (SyncE) integrated into E835 Controllers to increase accuracy, reduce cost, and simplify firmware by removing the need to manage an external timer.
- Compliance with IEEE 1588 Precision Time Protocol (PTP) v2; SyncE and PTP help maintain precise packet timing across distributed networks.
- Precision Time Measurement (PTM) v1.0a to synchronize a CPU with other devices in a server platform; applications include financial services, network monitoring, and distributed database systems.

Manageability

Broad system manageability capabilities using the latest DMTF (Distributed Management Task Force) protocols, including.

- NC-SI 1.2 protocol compliance (transport options include NC-SI over RBT and NC-SI over MCTP).
- SPDM over MCTP for device attestation.
- PLDM over RBT with an extended list of message types over RBT and MCTP transport.

Open vSwitch (OVS) Optimization

E835 controllers support DPDK-enabled OVS deployments to reduce packet processing overhead and improve throughput in software-defined networking use cases. Results depend on platform, configuration, and workload.

Modern Standards-based Security

Intel offers standards-based cryptographic security anchored by a hardware Root of Trust (RoT), including:

- SPDM-based device attestation (version support depends on firmware).
- Secure Boot to help protect device initialization and sensitive parameters.
- Secure Firmware Update to verify digital signatures of firmware image.
- Recovery mode / failsafe behavior activated upon detection of abnormal device operation.
- FIPS-aligned cryptographic capabilities where required by solution design (validation status depends on the deployed module and certification scope).

Quality at Launch

Intel continuously improves the Ethernet experience through structured defect triage, validation, and lifecycle management—reflecting our commitment to predictable execution and customer confidence. The software stack is also validated to ensure consistent behavior across supported configurations.

- Validated firmware and driver combinations
- Simplified configuration and validated workflows
- Integrated diagnostics for faster issue identification
- Designed to reduce common first-deployment friction points

Performance	
200Gb max throughput	
Host Interface	
PCI Express 5.0 x8, 4.0 x16	
Network Interface	
200Gb: 200GBASE-CR4/KR4, 100Gb: 100GBASE-CR4/KR4, 100G-CAUI4, 100GBASE-CR2/KR2, 100GAUI-2, 100GAUI-4	
50Gb: 50GBASE-CR2/KR2, 50GBASE-CR/KR, 50GAUI-1/-2, LAUI-2	
25Gb: 25GBASE-CR/KR, 25G-AUI C2C/C2M, 25GBASE-CR1/KR1	
10Gb: 10GBASE-KR, 10G SFI/SFP+	
Ethernet Port Configuration Tool (EPCT)	
Configurations supported for 200Gb E835-CCAM1, CCEM1	Configurations supported for 100Gb E835-CAM1
1x200, 2x100, 4x50, 8x25	1x100, 2x50, 4x25, 8x10
Packet Processing Pipeline	
Fully programmable pipeline with enhanced Dynamic Device Personalization (DDP)	
RDMA	
RoCEv2	
iWARP	
Virtualization	
Open vSwitch	
SR-IOV with up to 256 Virtual Functions (VF)	
768 Virtual Station Interfaces (VSI)	
Microsoft VM Queue (VMQ)	
VMware NetQueue	
Traffic Steering	
Receive Side Scaling (RSS)	
Intel® Ethernet Flow Director	
Stateless Offloads	
TCP Segment Offload (TSO)	
UDP Segment Offload (USO)	
Large Segment Offload (LSO)	
Checksum Offload (TCP/UDP/IP)	
Large Receive Offload (LRO)	
Transmit Side Scaling (TSS)	
Receive Side Scaling (RSS)	
Host Driver Operating System Support	
Linux	
ESXi	
Windows	

Overlay Network Stateless Offload		
VxLAN		
GENEVE		
NVGRE		
Quality of Service (Qos)		
Priority Code Point (PCP)		
Differentiated Services Code Point (DSCP)		
Enhanced Transmission Selection (802.1Qaz)		
Priority-based Flow Control (802.1Qbb)		
Advanced Transmission Scheduling		
Package		
23mm x 23mm FCBGA		
Converged Storage Network		
iSCSI		
NVMe over TCP		
Precision Clocks Synchronization		
IEEE 1588 Precision Time Protocol, per packet time stamping		
Integrated Synchronous Ethernet (SyncE)		
Network Boot		
Signed UEFI option ROM compatible with HTTPS boot		
Management		
NC-SI v1.2		
NC-SI over MCTP		
NC-SI over SMBus		
MCTP over PCIe		
BMC		
PLDM over NC-SI over RBT and PLDM based firmware update		
Environmental		
Commercial Operating Temperature Tj: 0 °C to 105 °C		
Extended Operating Temperature Tj*: -20 °C to 105 °C		
Storage Temperature Tj: -40 °C to 115 °C		
Certifications		
RoHS Compliant		
FCC Class A		
Product Order Codes		
Product Name	Product Code	Speed
Intel® Ethernet Controller E835-CCAM1	EZE835CCAM1	200Gb
Intel® Ethernet Controller E835-CCEM1 Extended Temperature SKU	EZE835CCEM1	200Gb
Intel® Ethernet Controller E835-CAM1	EZE835CAM1	100Gb
Intel® Ethernet Controller E835-XXVAM2	EZE835XXVAM2	25Gb

*Extended Temperature is only available for 200GbE, EZE835CCEM1

Warranty

Standard Intel limited warranty, one year. See Intel terms and conditions of sale for more details.

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

1. Applies to 200Gbe Intel Ethernet E835 Controllers and Network Adapters.

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