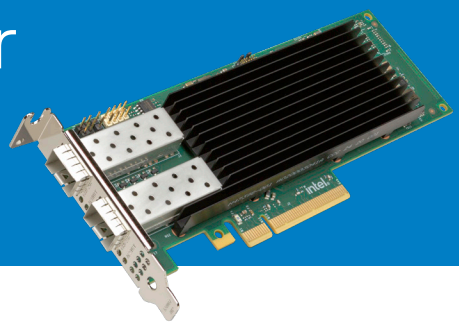
Product Brief
Intel® Ethernet 800 Series

Intel® Ethernet Network Adapter E830-XXVDA2



Key Specifications

- Dual port 25/10GbE SFP28
- PCIe 4.0 x8
- Dynamic Device Personalization (DDP)
- Data Plane Development Kit (DPDK) enabled
- IEEE 1588 Precision Time Protocol v2
- Precision Time Measurement (PTM) v1.0a
- Modern security with signed firmware, secure boot, and hardware root of trust (RoT)
- Commercial National Security Algorithm (CNSA) 1.0 compliant

Overview

Intel® Ethernet Network Adapter E830-XXVDA2 offers leading performance, security, manageability, and interoperability without the technical complexity and the high cost of proprietary technologies.

This adapter supports solutions across Cloud, Enterprise, and Communications with concurrent support of iWARP and RoCEv2 RDMA, modern security features, and key timing protocols. The low power design enables decreased energy consumption across the system to reduce costs and environmental impact, solving increasingly important power density challenges.

Intel Ethernet E830 and E810 800 Series network adapters share drivers, ensuring software consistency across generations of products for easy deployment.

Optimized for Intel® Xeon® processors

Every data center and workload need computing capacity and powerful ways to move data securely. Intel® architecture offers both. Deployment-ready, reliable, and affordable, Intel Ethernet E830 Network Adapters are the perfect choice for amplifying performance for servers 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
- Comprehensive operating system and hypervisor support
- 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

All Intel® Ethernet E830 Adapters offer these key features:

Remote Direct Memory Access (RDMA)

Both RoCEv2 and iWARP protocols are offered, and for added flexibility, RoCEv2 and iWARP can run concurrently.

Programmable Pipeline / Dynamic Device Personalization (DDP)

DDP improves packet processing performance by using the E830 Controller's programmable pipeline to classify frames instead of the CPU. DDP increases throughput, lowers latency, and reduces host CPU overhead in both network functions virtualization (NFV) workloads and cloud-native architectures.

Data Plane Development Kit (DPDK)

DPDK enabled to deliver faster NFV, advanced packet forwarding, and efficient packet processing resulting in effective use of CPU cycles and reduced overhead.

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 E830 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.
- Includes Precision Time Measurement (PTM) v1.0a, a protocol used to synchronize a CPU with other devices in a server platform, such as E830 network adapters. Applications benefitting 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.

- NC-SI 1.2 protocol compliance. Transport options include NC-SI over RBT, NC-SI over MCTP.
- Secured messages using SPDM over MCTP.
- PLDM over RBT with an extended list of message types, including T4, T5, T6 over RBT and MCTP transport.

Open vSwitch (OVS) Acceleration

The E830 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.

Modern Standards-based Security

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

- Unsigned device attestation in compliance with SPDM 1.1.2 Security Protocol and Data Model.
- 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.

For a complete list of features, see the Intel® Ethernet Controller E830 Datasheet

Adapter Features

Data Rate Supported	25/10/1GbE
Bus Type/Bus Width	PCIe 4.0 x 8
Dimension	6.57 in x 2.67 in (167mm x 68 mm)
Controller	Intel Ethernet Controller E830
Manageability for OCP NIC 3.0	RBT and RBT + MCTP
Supported Operating Systems	For a complete list of supported network operating systems visit: intel.com/support/EthernetOS
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

Airflow	Extended Temp 2.0 W Optics 260 LFM at 65 °C Ambient	Commercial Temp DAC 200 LFM at 45 °C Ambient	Commerical Temp 2.0 W Optics Cannot support at 65 °C Ambient
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 = 25GbE; amber = less than 25GbE; off = no link)		

Power Consumption

DACs	Typical Power	Max Power
25GbE Max	8.8 W	9.5 W
Idle (no traffic)	8.1 W	9.1 W
Optics		
25GbE Max	10.4 W	11.5 W
Idle (no traffic)	10.0 W	11.0 W

Ethernet Media Supported

25GbE SFP28	25GBASE-CR (802.3by 25G twinax), 25GBASE-CR1 (Consortium 25G twinax), 25GBASE-SR, 25GBASE-LR, 25G-AUI C2M
10GbE SFP+	10G SFI-DAC (SFP+ twinax); 10G SFI Limiting (SFP+ optics/AOC)

Product Order Code

E830XXVDA2 (Single Pack)
E830XXVDA2M (Five Pack)

Supported Operating Systems

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

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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