

Optical module ESN



AI Overview

The ESN (Electronic Serial Number) is a unique identifier stored in an optical module's EEPROM, used to identify, track, and manage the module within a network system.

What ESN Represents

The ESN is essentially a unique serial number assigned to each optical module during manufacturing. It allows network devices and administrators to:

- Identify the module's manufacturer, model, and production batch.
- Track module usage and lifecycle for maintenance or replacement.
- Ensure compatibility and interoperability with host devices.
- Support inventory management and network diagnostics.

How ESN is Stored and Accessed

Optical modules, such as SFP, SFP+, QSFP, and CFP, include an EEPROM (Electrically Erasable Programmable Read-Only Memory) that stores the ESN along with other critical information like:

- Vendor name and part number
- Supported data rates and wavelengths
- Digital Diagnostic Monitoring (DDM/DOM) parameters, including temperature, supply voltage, transmit/receive optical power, and laser bias current

The ESN can be read by the host device through the module's management interface, typically using an I²C interface defined in standards like SFF-8472. This allows network management software to monitor module health and verify authenticity.

Practical Uses of ESN

- Network Management:** ESNs help administrators identify which modules are installed in which ports, simplifying troubleshooting and configuration.
- Diagnostics and Monitoring:** Combined with DDM, the ESN allows correlation of performance data to a specific module.
- Inventory Control:** ESNs enable tracking of modules across multiple sites, ensuring proper replacement and warranty management.
- Security and Compliance:** Unique ESNs prevent unauthorized or counterfeit modules from being used in critical network infrastructure.

Summary

The ESN is a critical identifier for optical modules, stored in the module's EEPROM, and is used for identification, monitoring, and management within network systems. It works alongside other dia...

Article Content

Optical Modules in Intelligent Computing Scenarios

Huawei provides a full series of pluggable optical modules. A wide variety of modules give you flexible plug-and-play options for all types of interfaces.

Understanding Optical Modules: Working Principles,

Explore the working principles, structures, and performance metrics of optical modules, essential components of optical fiber communication

CPO Technology Nvidia: Death of Optical Modules and

Analysis of Nvidia's announcement from June 3, 2026: why CPO is killing optical module suppliers, who the beneficiaries are (TSMC, Marvell) and

Optical Modules in General-Purpose Computing Scenarios

Huawei offers a comprehensive portfolio of pluggable StarryLink optical modules for data center networks, with various models providing flexible plug-and-play solutions tailored to diverse interface

Economic Watch: From optical modules to chips -

The competitiveness of optical modules also largely hinges on the synergy of the complete upstream industrial chain, covering optical chips, ceramic packages and precision structural

Optical Component Revenue Reaches Nearly \$25B in

BOSTON (January 7, 2026) – AI-driven datacenter and transport builds will push the optical components market revenue to a record high in 2025, with datacom

Overview of 400G Optical Modules

The primary role of 400G optical modules is to increase data throughput, maximizing bandwidth and port density in data centers. Future

What is an Optical Module?

Learn about the different types of optical modules, their functions, packaging, and key technical concepts like 400G, PAM4, and more. Understand how optical

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

Optical module

Optical modules typically have an electrical interface on the side that connects to the inside of the system and an optical interface on the side that connects to the outside world through a fiber optic

40Gbps QSFP+ Optical Modules

1Gbps eSFP Optical Modules 10Gbps SFP+ Optical Modules 40Gbps QSFP+ Optical Modules 100Gbps QSFP28 Optical Modules Cables Hardware Installation Maintaining the Hardware

Displaying the Device Serial Number

Run the display transceiver interface interface-type interface-number command to view information about a specified optical module. VendorSN indicates the serial number of the optical

Viewing Information About the Optical Transceiver

With the display esn interface commands, you can query the ESN of the optical transceiver. Run the display esn interface command in any view to check the ESN of the optical

The Evolution of 400G, 800G, and 1.6T Optical Modules

With the rapid advancement of AI, HPC, and cloud computing, the demand for high-speed optical modules such as 400G, 800G, and even 1.6T is

From optical modules to chips -

Huagong Tech, an optical module manufacturer based in central China's Wuhan, launched the world's first 12.8-terabit XPO module in March, bundling the capacity of eight 1.6T modules into a

Displaying Hardware Information on Huawei Routers

The inventory information such as serial number, product code,optical module,device, power,voltage,temperature,fan, CPU and memory are very important on operation and

Optical module design resources | TI

View the TI Optical module block diagram, product recommendations, reference designs and start designing.

Dongshan Precision's Source Photonics to Invest USD1.2 Billion to

(Yicai) June 17 -- Source Photonics, a subsidiary of Chinese electronics manufacturer Dongshan Precision Manufacturing, plans to invest USD1.2 billion to increase its production capacity of optical

The Evolution of Optical Modules: 400G → 800G → 1.6T - A Strategic ...

Discover the evolution from 400G to 800G and 1.6T optical modules. Learn key technologies, CPO vs pluggable, and upgrade strategies for future-ready data centers.

Matrix Optical Modules: Boost AI Data Centers

Together, combined with automated optical fiber management systems, they create highly adaptable matrix optical modules in ai data centers. Instrumentation: Ensuring Reliability In

Optical Echo State Network Reservoir Computing

We propose an innovative design for an optical Echo State Network (ESN), an advanced type of reservoir computer known for its universal computational capabilities. Our design enables an

LL01ZZ-ESN××L06-M2|LEDLINK OPTICS,INC.

ESN offers two practical beam options, 24° and 38°, covering focused accent lighting and mid-range illumination needs. The lens is made from optical-grade PMMA 8N, delivering over 90% light

Pluggable Optical Modules: Transceivers for the Cisco

These small, modular optical interface transceivers offer a convenient and cost-effective solution for an array of applications in the data center,

Cisco Compatible Optical Modules Catalog

ORDERING OPTIONS ble Optical Modules Catalog is struct procurement and inventory management. All modules are available in standard rdered with eithe bail-clasp latch or a pull-tab for high-density

The Future of Telecommunications: Next-Generation Coherent Optical Modules

However, emerging technologies such as AI, cloud computing, and 5G require even greater capacity. For this reason, telecommunications companies are increasingly turning to coherent fiber

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