Optical Module GBIC

Article Overview

A GBIC (Gigabit Interface Converter) is a hot-pluggable optical transceiver that converts electrical signals into optical signals for gigabit network communication.

Overview

A GBIC is a modular transceiver used to connect network devices, such as switches or routers, to fiber optic or copper cabling. It performs electro-optical conversion, enabling data transmission over fiber networks for Gigabit Ethernet, Fibre Channel, SONET/SDH, and other high-speed protocols . GBIC modules are hot-swappable, allowing network administrators to change or upgrade connections without powering down the device .

Technical Features

o Data Rate: Typically supports 1 Gbps for gigabit networks .
o Connector Type: Uses SC duplex connectors for fiber connections .
o Distance & Wavelength:
o 1000BASE-SX GBIC: Short-range, multimode fiber, 850 nm, up to 550 m
o 1000BASE-LX/LH GBIC: Long-range, single-mode fiber, 1310 nm, up to 10 km
o 1000BASE-ZX GBIC: Extended-range, single-mode fiber, 1550 nm, up to 80 km

o Compatibility: Works with legacy switches and routers, particularly older Cisco Catalyst series .

Advantages and Limitations

Advantages:

o Standardized modular design allows flexible network configuration.
o Hot-swappable for minimal downtime.
o Supports both fiber and copper connections. Limitations:
o Larger physical size compared to SFP modules, reducing port density .
o Higher power consumption.
o Limited to legacy 1 Gbps networks; not suitable for modern 10 Gbps or higher speeds .

Comparison with SFP (Mini-GBIC)

The SFP module is the successor to GBIC, offering the same 1 Gbps performance in a smaller form factor, which allows higher port density and lower power usage . While GBICs are still used in legacy systems, SFPs

dominate modern network deployments due to their compact size and flexibility.

Use Cases

GBIC modules are primarily used in:

o Legacy enterprise networks requiring 1 Gbps fiber connections.
o Environments where modular, hot-swappable interfaces are needed.
o Situations where upgrading to SFP is not feasible due to cost or equipment constraints . In summary, GBIC modules remain relevant for legacy network systems, providing reliable gigabit connectivity with modular flexibility, though modern networks increasingly favor SFP and SFP+ modules for higher density and efficiency.

Introduction - Why Optical Transceivers Matter In every modern enterprise network, performance depends

Learn about the types, advantages, disadvantages, and applications of GBIC and SFP modules. Compare the two to

The GBIC standard, first defined in 1995, was the earliest hot-pluggable form factor in the optical transceiver industry. GBIC modules

Choosing the wrong module can lead to costly mismatches, link instability, or wasted budget. This guide

GBIC having module definition 4 provides access to sophisticated identification information that describes the GBIC"s capabilities,

Understanding the building blocks of your network infrastructure is crucial. When dealing

A GBIC functions as a transceiver that converts electrical signals into optical signals (or vice versa) for network communication. It

GBIC Transceiver: Communication Enabler GBIC transceiver, also called GBIC module, it serves as the core device,

GBIC, otherwise known as "gigabit interface converter", is a transceiver standard common to the application in Ethernet and fiber

Connect networking equipment with 1.25Gbps GBIC modules. Available in single-mode and multi-mode fiber and copper cabling

Optical Module GBIC

Comprehensive compatibility information for Cisco optical transceivers and network devices Disclaimer: Cisco makes the data in this

We offer a small choice of standard GBIC modules as a complement to our fiber-optic based products.

Allgemein Packungsmenge: 2 (Spezifikationen gelten für einen Artikel) Gerätetyp: SFP (Mini-GBIC)-Transceiver-Modul Formfaktor:

The main difference between GBIC vs SFP vs Mini GBIC is size, port density, and popularity. This post makes a

Meet the Mini-Gbic Module line that meets the most diverse demands of connections for structured cabling. Know more!

GBIC module corresponding switch is GBIC slot, and SFP module corresponding switch is SFP slot. ? 3. What Are the

Web: https://www.supremeacademicresearch.co.za