

Cisco 12000 Series Gigabit Switch Router (GSR) Gigabit Ethernet Line Card

THE GIGABIT ETHERNET LINE CARD IS THE FIRST ETHERNET-BASED PRODUCT FOR THE GSR 12000 SERIES, PROVIDING A COST-EFFECTIVE, HIGH-BANDWIDTH SOLUTION BETWEEN COLOCATED GSRs OR BETWEEN GSRs AND IP-RELATED EQUIPMENT SUCH AS EDGE ROUTERS, GIGABIT ETHERNET SWITCHES, AND NETWORK SERVERS. THE NEW LINE CARD CAN BE CONFIGURED WITH ONE OF TWO INTERFACE TYPES: A 1000BASE-SX MULTIMODE FIBER INTERFACE WITH 550-METER REACH OR A 1000BASE-LH SINGLE-MODE FIBER INTERFACE FOR UP TO 10-KM REACH.

Feature Summary

Packet Layer

- Multiple virtual output queues, eliminating head-of-line blocking
- 512-KB burst buffers, which smooth out the arriving packet bursts
- 256-MB default packet buffer memory to maximize TCP goodput.
- A forwarding table that can accommodate up to one million forwarding entries
- Application-specific integrated circuit (ASIC)-based queuing
- Quality-of-service (QoS) support
- Configurable with up to 256 MB of code and route-table memory
- Default line card packet buffer memory of 128 MB/128 MB (TX/RX)

Ethernet Upper Layers

- Media Access Control (MAC) with full-duplex operation
- 8B/10B encoding/decoding
- 1000Base-SX multimode, compliant with IEEE 802.3z specifications
- Optional 1000base-LX or 1000base-ZX single-mode interface, compliant with IEEE 802.3z specifications

Physical Layer

- SC duplex connectors

Software Features

- Auto-negotiation
- Flow control (transmit)
- Precedence setting/mapping
- Access Control List (ACL)
- Hot-Standby Routing Protocol (HSRP)
- Cisco Group Management Protocol (CGMP)
- MPLS/tag switching¹

- Committed Access Rate (CAR)
- NetFlow data export¹
- 802.1Q¹
- ECC

Specifications

Physical

- Occupies a single slot
- Weight: 6 lb (2.7 kg)
- Height: 14.5 in. (35.6 cm)
- Depth: 18.5 in. (45.7 cm)

Environmental

- Operating temperature: 32 to 104 F (0 to 40 C)
- Storage temperature: -4 to 149 F (-20 to 65 C)
- Relative humidity: 10 to 90%, noncondensing

Regulatory Compliance

Safety

- UL 1950, Third Edition
- CSA C22.2, No. 950-95, Third Edition
- EN 60950
- EN 41003
- AUSTEL TS001
- AS/NZS 3260
- EN 60825 Laser Safety (Class 1)
- Network Equipment Building Systems (NEBS) Level 3

Electromagnetic Emissions Certification

- FCC Class A
- AS 3548 Class A
- EN 55022 Class A
- VCCI Class 1

Immunity

- IEC-1000-4-2 ESD
- IEC-1000-4-3 radiated immunity
- IEC-1000-4-4 EFT
- IEC-1000-4-5 Surge
- IEC-1000-4-6 low-frequency common immunity
- IEC-1000-4-11 voltage dips and sags
- IEC-1000-3-2 power line harmonics

LEDs

- Link
- Active (port)
- Tx activity
- Rx activity

Connector

- SC-duplex connector

Network Management

- CiscoView
- Simple Network Management Protocol (SNMP)
- MIB-II

Optical Power Budget

Table 1 Worst-Case Long-Haul (LH) Link Power Budget

Parameter	10um SMF	Unit
Link Power Budget	10.5	db
Operating Distance	10,000	meter

Table 2 Worst-Case 1000Base-SX Link Power Budget

Parameter	MMF	Unit
Modal Bandwidth as Measured at 850nm	500	MHz*km
Link Power Budget	7.5	db
Operating Distance	550	meter

Ordering and Availability

Product No.	Description	Availability	IOS™ Release
GE-GBIC-SC-B	Gigabit Ethernet line card with either GBIC-SX-MM or GBIC-LH-SM or GBIC-ZX-SM	May '00	IOS 12.0(7.4)S or higher, IOS 11.2(19)GS4 or higher
GBIC-SX-MM	1000Base-SX GBIC module with multimode fiber interface, SC connector	January '99	
GBIC-LH-SM	1000Base-LH GBIC module with single-mode fiber interface, SC connector	January '99	
GBIC-ZX-SM	GBIC module with single-mode fibre interface, sc connector	January '99	

The single port Gigabit Ethernet line card is orderable and available today.

Note: The GSR GE cards must be configured with either GBIC-SX-MM, GBIC-LH-SM or GBIC-ZX-SM modules. No third-party GBIC is currently approved by Cisco Systems.

Special Notes

1. When filling in the GSR GE sales order DO NOT use the following 7500 GBIC components: (GBIC-SX, GBIC-SX=, GBIC-LX, GBIC-LX=).
2. When employing the GSR12008 or GSR12012 with one or more GE line cards please ensure that the system is configured with a full switching fabric.
3. GE-GBIC-SC-B and the GBIC part numbers can be ordered separately as spares.
4. GE-SX/LH-SC(=) Does not support ECC.



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