DATA SHEET

CISCO 5-PORT, 8-PORT, AND 10-PORT GIGABIT ETHERNET SHARED PORT ADAPTERS

The Cisco® I-Flex design combines shared port adapters (SPAs) and SPA interface processors (SIPs), leveraging an extensible design that enables service prioritization for voice, video and data services. Enterprise and service provider customers can take advantage of improved slot economics resulting from modular port adapters that are interchangeable across Cisco routing platforms. The I-Flex design maximizes connectivity options and offers superior service intelligence through programmable interface processors that deliver line-rate performance. I-Flex enhances speed-to-service revenue and provides a rich set of QoS features for premium service delivery while effectively reducing the overall cost of ownership. This data sheet contains the specifications for the Cisco 5-Port, 8-Port, and 10-Port Gigabit Ethernet SPAs (Cisco GE SPAs; refer to Figure 1).

Figure 1. Cisco 5-Port and 10-Port GE SPAs

PRODUCT OVERVIEW

The Cisco 5-Port, 8-Port, and 10-Port GE SPAs are available on high-end Cisco routing platforms offering the benefits of network scalability with lower initial costs and ease of upgrades. The Cisco SPA/SIP portfolio continues the Cisco focus on investment protection along with consistent feature support, broad interface availability, and the latest technology. The Cisco SPA/SIP portfolio allows deployment of different interfaces (packet over SONET/SDH [POS], ATM, Ethernet, etc.) on the same interface processor.

Gigabit Ethernet (GE) interfaces are commonly used for interconnecting routers or other devices within a central office, data center, or in a metropolitan-area network (MAN). Cisco offers an extensive variety of 1000BASE-X Gigabit Ethernet SPAs to meet customers' needs for various applications. With Cisco GE SPAs, users can mix and match SPA ports with other types of interfaces in the same slot. Each SPA provides standards-based Gigabit Ethernet implementation for compatibility and interoperability.

APPLICATIONS

The Cisco GE SPAs can be used in multiple applications, including:

- Inter- and intra-point of presence (POP) aggregation
- Metro Ethernet
- Internet peering

KEY FEATURES AND BENEFITS

The Cisco SPA/SIP portfolio offers many advantages, including:

- **Industry's most modular, flexible, intelligent interface processors**
  - Unmatched flexibility, providing mix-and-match of interface types on the same interface processor for consistent services, independent of access technology.
  - Pioneering programmable interface processors that provide flexibility for the service diversity required in next-generation networks.
  - Innovative design that provides intelligent delivery of services without compromising on performance.
- **Increase speed to service revenue**
  - The future-proof programmable Cisco architecture extended to 10 Gigabits per second dramatically improves customer density, increasing potential revenue per platform.
  - Interface breadth (copper, channelized, POS, ATM, and Ethernet) on a modular interface processor allows service providers to more quickly roll out new services, ensuring all customers large and small receive consistent, secure, and guaranteed services.
  - High-density SFP interfaces are featured for high-port-count applications with reach flexibility. Future optical technology improvements can be adopted using existing SPAs.
- **Dramatically improve the financials of your routing purchase**
  - Improved slot economics and increased density reduce capital expenditures (CapEx).
  - The ability to easily add new interfaces as they are needed enables a "pay-as-you-grow" business model while still offering a high-density solution.
  - SPAs are shared across multiple platforms, and can be easily moved from one to another, providing consistent feature support, accelerated product delivery, and a significant reduction in operating expenses (OpEx) through common sparing as service needs change.

PRODUCT SPECIFICATIONS

Tables 1 and 2 provide specifications of the Cisco GE SPAs.

Table 1. Product Specifications

Features	Descriptions
Product Compatibility	• Cisco 12000 Series Router • Cisco XR 12000 Series Router • Cisco CRS-1
Port Density per SPA	5-port, 8-port, and 10-port GE
Physical Interfaces	SX, LX/LH, and ZX SFP
LED Indicators	SPA status---Bicolor green and amber LEDs encode the SPA status as follows: • LED off---SPA is powered off • LED amber---SPA is powered on and initializing • LED green---SPA is powered on and operational In addition to the status LED, the SPAs also have a bicolor, surface-mount, right-angle LED dedicated to each port to indicate port status. The green and amber LEDs encode the port status as follows: • LED off---Port is not enabled by software • LED---Port is enabled by software, but there is a problem with the Ethernet link • LED green---Port is enabled by software, and there is a valid Ethernet link

Features	Descriptions
Features and Functions	• Autonegotiation • Full-duplex operation • 802.1Q VLAN termination • Jumbo-frames support (9188 bytes) • Support for command-line interface (CLI)-controlled online insertion and removal (OIR) • 802.3x flow control • Up to 4000 VLANs per SPA • Up to 5000 MAC accounting entries per SPA (source MAC accounting on the ingress and destination MAC accounting on the egress) • Up to 2000 MAC address entries for destination MAC address filtering per SPA, and up to 1000 MAC address filtering entries per port • Per-port byte and packet counters for policy drops; oversubscription drops; cyclic-redundancy-check (CRC) error drops; packet sizes; and unicast, multicast, and broadcast packets • Per-VLAN byte and packet counters for policy drops; oversubscription drops; and unicast, multicast, and broadcast packets • Per-port byte counters for good bytes and dropped bytes Other software features supported: • Ethernet over Multiprotocol Label Switching (EoMPLS) • Quality of service (QoS) • Hot Standby Router Protocol (HSRP) • Virtual Router Redundancy Protocol (VRRP)
Network Management	Network management using: • Host-system CLI • Simple Network Management Protocol (SNMP) Inventory- and asset management-related MIBs: • Entity-MIB (RFC 2737) • Cisco-entity-asset-MIB Fault management: • Cisco-entity-field-replaceable unit (FRU)-control-MIB • Cisco-entity-alarm-MIB • Cisco-entity-sensor-MIB Physical interface management: • IF-MIB • Etherlike-MIB (RFC 2665) Other MIBs: • Remote Monitoring (RMON)-MIB (RFC 1757) • Cisco-class-based-QoS-MIB • MPLS-related MIBs • Ethernet MIB/RMON

Features	Descriptions
Reliability and Availability	• OIR of the SPA within the SIP and the optics within the SPA • Field-replaceable SFP optical modules
Physical Specifications	5-Port and 8-Port GE SPA: • Weight: 0.75 lb (0.34 kg) • Height: 0.8 in. (2.03 cm)---(single height) • Width: 6.75 in. (17.15 cm) • Depth: 7.28 in. (18.49 cm) 10-Port GE SPA: • Weight: 1.5 lb (0.68 kg) • Height: 1.4 in. (3.55 cm)---(double height) • Width: 6.75 in. (17.15 cm) • Depth: 7.28 in. (18.49 cm)
Power	• 5-Port GE SPA: 18.1W • 8-Port GE SPA: 20W • 10-Port GE SPA: 25W
Environmental Specifications	• Storage temperature: –38 to 150°F (–40 to 70°C) • Operating temperature, nominal: 32 to 104°F (0 to 40°C) • Operating temperature, short term: 32 to 131°F (0 to 55°C) • Storage relative humidity: 5 to 95% relative humidity • Operating humidity, nominal: 5 to 85% relative humidity • Operating humidity, short term: 5 to 90% relative humidity • Operating altitude: –60 to 4000 meters
Compliance and Agency Approvals	**Safety** • UL 60950-1 • CSA C22 No. 60950-1 • EN 60950-1 • IEC 60950-1 • AS/NZS 60950 • EN 60825-1 • EN 60825-2 • 21 CRF 1040 **EMC** • CFR 47 • FCC Part 15---Class A • ICES 003---Class A • CISPR 22 Class A • EN 55022 Class A • EN 300386 Class A • AS/NZS Class A

Features	Descriptions
	• VCCI---Class B • EN 50082-1 • EN 55024 • IEC/EN61000-4-2 Electrostatic Discharge Immunity (8-kV contact, 15-kV air) • IEC/EN61000-4-3 Radiated Immunity (10 V/m) • IEC/EN61000-4-4 Electrical Fast Transient Immunity (2-kV power, 1-kV signal) • IEC/EN61000-4-5 Surge AC Port (4-kV CM, 2-kV DM) • IEC/EN61000-4-5 Surge Signal Port (1-kV indoor, 2-kV outdoor) • IEC/EN61000-4-5 Surge DC Port (1 kV) • IEC/EN61000-4-6 Immunity to Conducted Disturbances (10 Vrms) • IEC/EN61000-4-8 Power Frequency Magnetic Field Immunity (30 A/m) • IEC/EN61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations **Telecom** • IEEE 802.3z **Industry Standards** The Cisco GE SPAs are designed to meet the following requirements (some qualifications are currently in progress): • SR-3580---Network Equipment Building System (NEBS): Criteria levels (Level 3 compliant) • GR-63-CORE---NEBS: Physical protection • GR-1089-CORE---NEBS EMC and safety

Table 2. Optical Specifications: Modular

Gigabit Ethernet SFP Optics	Maximum Distance
Short wavelength (SX) Small Form Factor Pluggable (SFP) Optics	1804 ft (550 m)
Long wavelength/long haul (LX/LH) SFP Optics	6.2 mi (10 km)
Extended distance (ZX) SFP Optics	43.5 mi (70 km)

ORDERING INFORMATION

To place an order, visit the Cisco Ordering Home Page or refer to Table 3.

Table 3. Ordering Information

Product Name	Part Number
Cisco 5-Port Gigabit Ethernet Shared Port Adapter	SPA-5X1GE
Cisco 5-Port Gigabit Ethernet Shared Port Adapter, Spare	SPA-5X1GE=
Cisco 8-Port Gigabit Ethernet Shared Port Adapter	SPA-8X1GE
Cisco 8-Port Gigabit Ethernet Shared Port Adapter, Spare	SPA-8X1GE=
Cisco 10-Port Gigabit Ethernet Shared Port Adapter	SPA-10X1GE

Product Name	Part Number
Cisco 10-Port Gigabit Ethernet Shared Port Adapter, Spare	SPA-10X1GE=
Cisco Shared Port Adapter Blank Cover	SPA-BLANK
Cisco Shared Port Adapter Blank Cover, Spare	SPA-BLANK=
Cisco Extended Temperature SX SFP	SFP-GE-S
Cisco Extended Temperature SX SFP, Spare	SFP-GE-S=
Cisco Extended Temperature LX/LH SFP	SFP-GE-L
Cisco Extended Temperature LX/LH SFP, Spare	SFP-GE-L=
Cisco Extended Temperature ZX SFP	SFP-GE-Z
Cisco Extended Temperature ZX SFP, Spare	SFP-GE-Z=

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FOR MORE INFORMATION

For more information about the Cisco SPA/SIP portfolio, visit http://www.cisco.com/go/spa or contact your local Cisco account representative.

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