

CISCO 7304 4-PORT 10BASE-T/100BASE-TX FAST ETHERNET SHARED PORT ADAPTER

The Cisco® I-Flex design combines shared port adapters (SPA) and SPA interface processors (SIP), 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 7304 4-Port 10BASE-T/100BASE-TX Fast Ethernet Shared Port Adapter (Cisco 7304 10/100 Fast Ethernet SPA; refer to Figure 1).

PRODUCT OVERVIEW

The Cisco 7304 10/100 Fast Ethernet SPA is designed to meet the growing demand for customers who need cost-effective and simple connectivity for Internet gateway, peering, or Metro Ethernet access applications. This SPA is a single-width pluggable module capable of supporting four 10/100 Fast Ethernet copper (RJ-45) connections. Two SPAs fit into one carrier card in a single line-card slot of the Cisco 7304 Router, greatly extending port density and modularity.

Figure 1. Cisco 7304 10/100 Fast Ethernet SPA



Cisco 7304 SPA Modular Services Card

The Cisco 7304 SPA Modular Services Card (Cisco 7304 SPA MSC; refer to Figure 2) is designed to enable the use of SPAs in the Cisco 7304 Router. It allows the configuration of two single-height SPAs per Cisco 7304 line-card slot. Online insertion and removal (OIR) of a SPA and the MSC is supported.

Figure 2. Cisco 7304 SPA MSC with One 10/100 Fast Ethernet SPA



FEATURES AND BENEFITS

Table 1 summarizes the features and benefits of the Cisco 7304 10/100 Fast Ethernet SPA.

Table 1. Features and Benefits of Cisco 7304 10/100 Fast Ethernet SPA

Feature	Benefits
Enables up to eight Fast Ethernet ports per slot for Ethernet aggregation	The four ports in a single-height form factor provide maximum flexibility for a variety of densities of Fast Ethernet aggregation topologies.
Provides maximum modularity for flexible deployment options	With the implementation of a single-height SPA, the Cisco 7304 10/100 Fast Ethernet SPA doubles its modularity as well as its density for 10/100 Ethernet interfaces.
Supports standards-based Fast Ethernet implementation for compatibility and interoperability	The Cisco 7304 10/100 Fast Ethernet SPA is based on industry standards---helping ensure interoperability and compatibility with other standards-based Fast Ethernet products in the customer’s network.

PRODUCT SPECIFICATIONS

Table 2 gives specifications of the Cisco 7304 10/100 Fast Ethernet SPA.

Table 2. Specifications of Cisco 7304 10/100 Fast Ethernet SPA

Features	Descriptions
Hardware Requirements	<p>The Cisco 7304 10/100 Fast Ethernet SPA is supported on the following:</p> <ul style="list-style-type: none"> • Chassis---Cisco 7304 Router • Routing engines---Cisco 7304 NSE-100 Network Services Engine and Cisco NPE-G100 Network Processing Engine • Line cards---SPAs, port adapters, and Cisco 7304 native line cards can coexist in the Cisco 7304 chassis • Carrier---Requires a Cisco 7304 SPA MSC (part number 7304-MSC-100)
Software Requirements	Cisco IOS® Software Release 12.2(20)S2 and later

Features	Descriptions
Features and Functions	<ul style="list-style-type: none"> • Four ports of 10/100 Fast Ethernet per SPA, and up to eight Fast Ethernet ports per line-card slot • Jumbo frame support • Each port configurable for either full- or half-duplex operation • Autosensing of medium dependent interface-crossover (MDI-X) for crossover cables • Support for command-line interface (CLI)-controlled OIR • Parity and cyclic-redundancy-check (CRC) detection for application-specific integrated circuit (ASIC) and discrete memory errors • 802.3x flow control • Autonegotiation in duplex mode • Autodetection of 10/100 link rates • 4096 VLANs per SPA subject of IDB limits • Division of the 4096 VLAN ternary-content-addressable-memory (TCAM) filtering entries into 1024 entries per port • Division of the 2048 DA MAC address filtering entries into 512 entries per port • Per-port counters for policy drops, oversubscription drops, CRC error drops, packet sizes, unicast, multicast, and broadcast packets • Per-port byte counters for good bytes and dropped bytes <p>The following additional features are supported in the Cisco 7304 Router:</p> <ul style="list-style-type: none"> • Ethernet over Multiprotocol Label Switching (EoMPLS) • QoS • Hot Standby Router Protocol (HSRP) • Virtual Router Redundancy Protocol (VRRP)
Environmental Conditions	<ul style="list-style-type: none"> • 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 meters to 4000 meters
LEDs	<p>The Cisco 7304 10/100 Fast Ethernet SPA has a series of front-panel LEDs that indicate power and operational status as well as Ethernet port status. The green and amber LEDs encode the SPA status as follows:</p> <ul style="list-style-type: none"> • LED off indicates that the SPA is powered off. • LED amber indicates that the SPA is powered on and initializing. • LED green indicates that the SPA is powered on and operational. <p>In addition to the status LED, the Cisco 7304 10/100 Fast Ethernet SPA also has a bicolor, surface-mount, right-angle LED dedicated to each Fast Ethernet port to indicate port status. The green and amber LEDs encode the port status as follows:</p> <ul style="list-style-type: none"> • LED off indicates that the port is not enabled by software.

Features	Descriptions
	<ul style="list-style-type: none"> • LED amber indicates that the port is enabled by software, but there is a problem with the Ethernet link. • LED green indicates that the port is enabled by software, and there is a valid Ethernet link. <p>The Cisco 7304 SPA MSC supports LEDs indicating OIR status and operational status. The illumination of the LED for OIR status means the following:</p> <ul style="list-style-type: none"> • LED off indicates a default state. • LED on (green light) indicates that the line card is ready to be removed. <p>The operational status LED is bicolor with an off state, a green state, or a yellow state as follows:</p> <ul style="list-style-type: none"> • LED off indicates that the card is offline. • LED yellow indicates that Cisco SPA MSC is powering up. • LED green indicates that the power is on and OK.
Physical Specifications	<ul style="list-style-type: none"> • Height: 0.80 inches (2.03 cm) (single height) • Width: 6.75 inches (17.15 cm) • Depth: 8.10 inches (20.57 cm) • Weight: 0.80 lb (0.37 kg)
Network Management	<ul style="list-style-type: none"> • Network management using: <ul style="list-style-type: none"> – Host system CLI – Simple Network Management Protocol (SNMP) • Inventory and asset management-related MIBs: <ul style="list-style-type: none"> – Entity-MIB (RFC 2737) – Cisco-entity-asset-MIB • Fault management: <ul style="list-style-type: none"> – Cisco-entity-field-replaceable unit (FRU)-control-MIB – Cisco-entity-alarm-MIB – Cisco-entity-sensor-MIB • Physical interface management: <ul style="list-style-type: none"> – IF-MIB – Etherlike-MIB (RFC 2665) • Other MIBs: <ul style="list-style-type: none"> – Remote Monitoring (RMON)-MIB (RFC 1757) – Cisco-class-based-QoS-MIB – MPLS-related MIBs • Ethernet MIB/RMON
Power	Unit power: 16.0W
Connector Specifications	RJ-45 connectors (two pair) for copper connectivity

Features	Descriptions
Regulatory Approvals	<ul style="list-style-type: none"> • UL 60950 • CSA C22 No. 60950 • EN 60950 • 73/23/EEC • AS/NZS 3260 • IEC 60950
Regulatory Compliance	<p>CE Marking</p> <p>Safety</p> <ul style="list-style-type: none"> • UL 60950 • CSA C22 No. 60950 • EN 60950 • IEC 60950 • AS/NZS 3260 <p>EMC</p> <ul style="list-style-type: none"> • CFR 47, Part 15 • ICES 003 • CISPR 22 • EN 55022 • EN 300386 • AS/NZS 3548 • VCCI • EN 50082-1 • EN 55024 • EN 61000-6-1 • EN 61000-4-2 • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-5 • EN 61000-4-6 • EN 61000-4-11 <p>Industry Standards</p> <p>The Cisco 7304 10/100 Fast Ethernet SPA is designed to meet the following requirements (some qualifications are currently in progress):</p> <ul style="list-style-type: none"> • 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 • EN 300 386 (2000) • ETS 300 019 part 1-1, class 1.1 • ETS 300 019 part 1-2, class 2.3

Features	Descriptions
	<ul style="list-style-type: none"> • ETS 300 019 part 1-3, class 3.1 • Verizon-SIT.NEBS.TE.NPI.2002.010 • SBC-TP6200MP, May 2002 • AT&T-NEDS 4.0 (pending) <p>Immunity</p> <ul style="list-style-type: none"> • EN 50082-1 • EN 55024 • EN 61000-6-1 • EN 61000-4-2 • EN 61000-4-3 • EN 61000-4-4 AC • EN 61000-4-4 DC • EN 61000-4-4 Sign. Line • EN 61000-4-5 AC • EN 61000-4-5 DC • EN 61000-4-5 Sign. Line • EN 61000-4-6 • EN 61000-4-11 AC Line <p>NEBS Documents</p> <ul style="list-style-type: none"> • SR-3580---NEBS: Criteria levels (Level 3 compliant) • GR-63-CORE---NEBS: Physical protection • GR-1089-CORE---NEBS: EMC and safety • EN 300 386 (2000) • ETS 300 019 part 1-1, class 1.1 • ETS 300 019 part 1-2, class 2.3 • ETS 300 019 part 1-3, class 3.1 • Verizon-SIT.NEBS.TE.NPI.2002.010 • SBC-TP76200MP • AT&T-NEBS 4.0

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 7304 4-Port 10BASE-T/100BASE-TX Fast Ethernet Shared Port Adapter	SPA-4FE-7304
Cisco 7304 4-Port 10BASE-T/100BASE-TX Fast Ethernet Shared Port Adapter, Spare	SPA-4FE-7304=
Cisco 7304 SPA Modular Services Card	7304-MSC-100
Cisco 7304 SPA Modular Services Card, Spare	7304-MSC-100=

Product Name	Part Number
Cisco SPA Blank Cover	SPA-BLANK
Cisco SPA Blank Cover, Spare	SPA-BLANK=

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FOR MORE INFORMATION

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