

Data Sheet

Cisco 7304 1-Port OC-12c/STM-4c ATM Line Card

The Cisco® 7304 1-Port OC-12c/STM-4c ATM Line Card delivers the versatility and high performance to benefit a variety of applications. These applications include high-speed WAN uplinks in customer premises equipment (CPE) deployments, high-speed enterprise backbone networks, and high-speed uplinks for the Cisco 7304 Router as a medium-density, medium-speed, edge-aggregation router in Tier 2 and 3 service provider points of presence (POPs). The line card uses Small Form-Factor Pluggable (SFP) optics to provide a range of options.

Figure 1
Cisco 7304 1-Port OC-12c/STM-4c ATM Line Card



Developed for customers that need a combination of performance and deployment flexibility, the Cisco 7304 meets current and future requirements for a midrange router. The Cisco 7304 delivers high-performance forwarding and hardware-accelerated services in a compact 4-rack-unit (4-RU), 4-interface-slot form factor.

Powerful and flexible, the Cisco 7304 provides multiprotocol support, interface granularity, and high-availability features in a platform that is ideal for deployment in various applications such as high-end enterprise routing, medium-speed and medium-density leased-line aggregation in service provider Tier 2 and 3 POPs, and service provider-managed CPE deployments (Table 1). Providing WAN connectivity at speeds ranging from DS-3 through OC-48/STM-16, and LAN connectivity at speeds up to Gigabit Ethernet (through two 1000 Ethernet ports built into the Cisco Network Services Engine NSE-100 route processor), the Cisco 7304 supports a wide range of concurrently running applications and lives up to the high standards of the Cisco 7000 Series of midrange routers.

Table 1. Cisco 7304 Router Features and Benefits

Features	Benefits
1 port of OC-12/STM-4 ATM	Offers connectivity options for both enterprise and service providers customers
Up to 622 Mbps	Provides high-performance routing and connectivity
Online insertion and removal (OIR)	Allows for insertion of the card without rebooting the router
Multiprotocol Encapsulation over ATM Adaptation Layer 5 (AAL5) and IP over ATM	Provides flexibility to choose the protocol that best suits the customers' needs
2048 virtual circuits	Delivers high scalability to meet the needs of service providers
SFP optics	Offers various optical choices for customers

Product Specifications

Components

The Cisco 7304 1-Port OC-12c/STM-4c ATM Line Card (Tables 2 and 3) includes the following components:

- Full-duplex ATM interface
- Unspecified bit rate (UBR) and variable bit rate (VBR) (not real-time) service classes
- OIR
- 8 virtual path identifier (VPI) bits/16 virtual channel identifier (VCI) bits
- Support for 16- and 32-bit cyclic redundancy checks (CRCs)
- SPE scrambling
- 2048 active connections per port, 2048 active virtual circuits per board
- Per-virtual circuit and per-virtual path traffic shaping
- Classical IP and Address Resolution Protocol (ARP) over ATM (RFC 1577)
- Multiprotocol Encapsulation over AAL5 (RFC 1483)
- AAL5, F4/F5 operations, administration, and maintenance (OAM) cells
- User-Network Interface (UNI) 3.0, 3.1, and 4.0, Integrated Local Management Interface (ILMI) 3.0

Table 2. Cisco 7304 1-Port OC-12c/STM-4c ATM Line Card Optical Specifications

Fiber Interface	Transmit Power	Wavelength	Input Power	Input Sensitivity	Loss Budgets Increasing/Decreasing	Nominal Distance
Multimode	-16 dBm	1310nm	-5 dBm	-33 dBm	-30 dBm/-45 dBm	1.2 miles (2 km)
Single Mode Intermediate Reach	-11 dBm	1310nm	0 dBm	-36 dBm	-30 dBm/-45 dBm	9 miles (15 km)
Single Mode Long Reach 1	-3 dBm	1310nm	-7 dBm	-36 dBm	-30 dBm/-45 dBm	25 miles (40 km)
Single Mode Long Reach 2	-3 dBm	1550nm	-7 dBm	-36 dBm	-30 dBm/-45 dBm	50 miles (80 km)

Table 3. Cisco 7304 1-Port OC-12c/STM-4c ATM Line Card Product Specifications

Feature	Description
Environmental Conditions	Operating temperature: 32° to 104°F (0° to 40°C) Storage temperature: -4° to 149°F (-20° to 65°C) Operating humidity: 5° to 90 percent (noncondensing) Altitude: -500 to 6500 ft (-152 to 1981m)
Performance	The line card includes one port of OC-12/STM-4 ATM at 622 Mbps full duplex.

Feature			Description
Physical Specifications			Height: 1.92 in. (4.87 cm) Width: 8.44 in. (21.43 cm) Depth: 12.94 in. (32.87 cm) Weight: 3.0 lb (1.36 kg)
Mean time between failure (MTBF)			5.5 years for system configuration
Line-Card Indicators			
LED Label	Color	State	Function
Status	Green/Yellow	Green	Indicates line card is online
		Yellow	Indicates line card bootstrapping is in progress
		Off	Indicates line card is offline and deactivated
OIR	Green	On	Indicates line card is ready to be removed in command-line interface (CLI)-controlled OIR
		Off	Indicates line card is online
Carrier/alarm	Green/Yellow	Green	Indicates that a valid SONET signal has been detected with no alarm conditions
		Yellow	Indicates that an alarm condition is present
		Off	Indicates that no valid SONET signal has been detected
ACTIVE/LOOPBACK	Green/Yellow	Green	Indicates that the port has been configured and is enabled
		Yellow	Indicates that the port is in diagnostic loopback mode
		Off	Indicates that the port has not been configured
Regulatory Compliance and Safety Information			
Product Regulatory Compliance			Products bear CE marking, indicating compliance with the 89/366/EEC and 73/23/ECC directives, which include the following safety and EMC standards:
Safety			<ul style="list-style-type: none"> • UL 60950 • CSA C22.2 • EN60950 • IEC 60950 • TS 001 • AS/NZS 3260
EMC			<ul style="list-style-type: none"> • FCC Part 15 (CFR 47) Class A • ICES-003 Class A • EN55022 Class A • CISPR 22 Class A • AS/NZS 3548 Class A • VCCI Class A • EN55024 • EN50082-1 • ETS300386
Industry EMC, Safety, and Environmental Standards			<ul style="list-style-type: none"> • GR-63-Core NEBS Level 3 Requirement • GR-1089-Core NEBS Level 3 Requirement • ETS 300-019 Storage Class 1.1 • ETS 300-019 Transportation Class 2.3 • ETS 300-019 Stationary Use Class 3.1

Ordering Information

To place an order, visit the Cisco Ordering Home Page (http://www.cisco.com/public/ordering_info.shtml), or refer to Table 4.

Table 4. Ordering Information

Product Description	Part Number
Cisco 7304 1-Port OC-12c/STM-4c ATM Line Card	7300-1OC12ATM
Cisco 7304 1-Port OC-12c/STM-4c ATM Line Card, spare	7300-1OC12ATM=
OC12/STM-4 SFP, Multimode Fiber	SFP-OC12-MM
OC12/STM-4 SFP, Single Mode, Intermediate Reach	SFP-OC12-IR1
OC12/STM-4 SFP, Single Mode, Long Reach (40 km)	SFP-OC12-LR1
OC12/STM-4 SFP, Single Mode, Long Reach (80 km)	SFP-OC12-LR2

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For More Information

For more information about the Cisco 7304 Router visit <http://www.cisco.com/go/7300> or contact your local Cisco account representative.

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