DATA SHEET

CISCO SOHO 96 ADSL OVER ISDN SECURE BROADBAND ROUTERS AFFORDABLE, SECURE, EASY-TO-USE BROADBAND ACCESS FOR SMALL OFFICES

The Cisco® SOHO 96 ADSL over ISDN Secure Broadband Router provides secure connectivity to small and remote offices with up to five users and teleworkers. The Cisco SOHO 96 router supports integrated security features of Cisco IOS® Software such as stateful-inspection firewall protection, strong encryption for virtual private networks (VPNs), easy setup for nontechnical users with a Web-based setup tool, and advanced management capabilities to lower operational costs.

Figure 1. Cisco SOHO 96 Secure Broadband Router

Cisco SOHO 96 router has an integrated ADSL modem that supports ADSL over ISDN lines, a four-port 10/100 Ethernet LAN switch for connecting multiple PCs or network devices in a small office network, and an integrated ISDN S/T port that can be used for remote management and troubleshooting.

SECURE INTERNET ACCESS

The Cisco SOHO 96 ADSL over ISDN Secure Broadband Router, recommended for up to five users, allows all users in a small office to share a secure broadband connection with an integrated stateful-inspection firewall. Corporate teleworkers or small-office users can also take advantage of the Cisco SOHO 96 router for VPN connections to the corporate network. The router can set up secure Triple Data Encryption Standard (3DES) encrypted connections using Cisco IOS Software or users can initiate VPN tunnels from PC-based VPN clients on the LAN.

EASY SETUP AND DEPLOYMENT

The Cisco SOHO 96 router includes the Cisco Router Web SetUp Tool (CRWS), a Web-based configuration tool, available in multiple languages, that allows users to quickly self-install the router. Because CRWS is Web-based, no additional software is required on the PC for configuration. Users simply point a browser to the router and follow a few easy steps to quickly get the router up and running. Additionally, the Cisco Configuration Express service allows enterprise or service provider customers who order products direct from Cisco to have preconfigured Cisco SOHO 96 routers shipped from manufacturing directly to the end users.

ADVANCED MANAGEMENT FEATURES FOR LOW COST OF OWNERSHIP

To simplify management and reduce ongoing operational costs, the Cisco SOHO 96 router takes advantage of many local and remote debug and troubleshooting features in Cisco IOS Software. The built-in ISDN S/T port allows out-of-band management of the router, if it is not reachable via the ADSL over ISDN interface. To further reduce operational costs, the router supports centralized management and configuration updates with the Cisco IE 2100 Intelligent Engine management appliance.

The Cisco SOHO 96 router provides the right combination of integrated security features, including a four-port 10/100 Ethernet LAN switch, advanced management features including management via the integrated ISDN S/T port, to secure broadband connections for small office and home office users. The Cisco SOHO 96 router uses the same Cisco IOS Software that is used in large service provider and enterprise networks, allowing small-office users to take advantage of the proven reliability of Cisco IOS Software.

FEATURES AND BENEFITS

Table 1. Key Product Features and Benefits of the Cisco SOHO 96 Router

Features	Benefits
Shared Broadband Access	Allows multiple users to share connections with a single IP address
Secure Internet Access	
Stateful Packet Inspection Firewall (Cisco IOS Firewall Feature Set)	• Offers internal users secure, per-application dynamic access control (stateful inspection) for all traffic across perimeters • Defends and protects router resources against denial-of-service (DOS) attacks • Checks packet headers and drops suspicious packets • Protects against unidentified, malicious Java applets • Details transactions for reporting on a per-application, per-feature basis
Network Security Features with Cisco IOS Software, Including Access Control Lists (ACLs), Dynamic and Static Network and Port Address Translation (NAT/PAT), Lock & Key, Dynamic ACLs, and Router and Route Authentication	Provides perimeter network security to prevent unauthorized network access
Software-Based IP Security (IPSec) 3DES Encryption	Enables VPN tunnels to terminate in the router allowing all users connected to the router a secure connection from the remote site to a corporate network
Multiuser IPSec Pass-Through	Supports teleworkers or multiple agents using VPN client software on their PCs, allowing IPSec tunnels to pass through the router when VPN PC software clients are used
Multiuser Point-to-Point Tunneling Protocol (PPTP) Pass-Through	Support for PPTP tunnels, encrypted or unencrypted, initiated from the PC
IPSec NAT Pass-Through and NAT Traversal	• Allows IPSec tunnels to be established from PC VPN clients in a LAN environment that uses NAT to optimize use of IP addresses • NAT traversal allows IPsec tunnels to be established across multiple NAT domains

Features	Benefits
Full-Function NAT (one-to-many and many-to-many)	Allows several applications and devices, including NetMeeting and H.323 phones, to be used transparently from a LAN that deploys NAT
Static-NAT-Based DMZ, Defining A Static Mapping Between A Public IP Address/Port And A Host On The LAN	Allows access to applications (such as Web and Simple Network Management Protocol [SMTP] servers) on the LAN from the WAN via a pinhole on the NAT firewall
Quality of Service (QoS)	
Asynchronous Transfer Mode (ATM) QoS, Including ATM Traffic Universal Broadband Router (UBR), nonreal-time Variable Bit Rate (VBRnrt), and Constant Bit Rate (CBR) with per-VC Queuing and Traffic Shaping	Helps ensure QoS with ability to send traffic over the appropriate virtual circuit to provide ATM-level shaping and helps ensure that no head-of-line blocking can happen between circuits of different or equal traffic classes
Easy Setup and Deployment	
Plug and Play with Default Settings and Web-Based Setup Tool	Users can easily set up the router and customize advanced features
CRWS	Allows nontechnical users to complete installation by simply by pointing a browser at the router and providing user information
Cisco Configuration Express	Lowers cost of deployment by shipping preconfigured units directly to end users without staging or storing
Advanced Management Features for Low Cost of Ownership	
Router Status Page in CRWS	Provides a Web-based visual representation of router configuration and feature status (firewall activated, VPN tunnel up, for example)
Cisco IOS Software Interactive Debug and Remote Management Features Through the Integrated ISDN S/T Port	Enables remote management and monitoring via SNMP, Telnet, or HTTP and local management via console port to diagnose network problems in detail; remote management is possible even if the WAN interface is down
Cisco IOS Software Command Line Interface (CLI)	Allows customers to use existing knowledge of Cisco IOS Software CLI for easier installation and manageability without additional training
Cisco IOS Software Technology	Offers technology that is used throughout the backbone of the Internet and in most enterprise networks
Cisco CNS 2100 Series Intelligence Engine	Provides for centralized Cisco IOS Software configuration update; remote sites are configured to contact this centrally located device for configuration updates
Supported by Cisco VPN Solution Center, CiscoWorks VMS, and Cisco Secure Policy Manager	Allows for scalable deployments of security policies management
Secure Shell (SSH) Protocol	Provides a secure, encrypted connection to a router, similar to an inbound Telnet session

Table 2. Cisco SOHO 96 Series Hardware Specifications

Hardware Specifications	Cisco SOHO 96 Router
Processor	Motorola RISC
Default DRAM* Memory	64 MB
Maximum DRAM Memory	64 MB
Default Flash* Memory	8 MB
Maximum Flash Memory	8 MB
WAN	ADSL over ISDN
LAN	Four-port 10/100-Base-T with autosensing MDI/MDX for sensing cable type (straight-through or crossover)
Console port	RJ-45
ISDN Basic Rate Interface (BRI) S/T	RJ-45—ISDN BRI S/T port which can be configured for ISDN out-of-band management (Cisco SOHO 96 only)
LEDs	10
External Power Supply	Universal 100-240 VAC

* DRAM and Flash memory must be obtained from Cisco Systems

Table 3. Memory Requirements and Software Feature Sets for the Cisco SOHO 96 Router

Cisco SOHO 96 IOS Software Images	Cisco SOHO 96 Router Memory Requirements	
	Flash	**DRAM**
IP Firewall/IPSec 3DES	8 MB	32 MB

Table 4. Protocols and Features Supported by the Cisco SOHO 96 Router

	Cisco SOHO 90 Series Routers
Routing/Bridging	
Point-to-Point Protocol over Ethernet (PPPoE), including TCP MSS adjust	X
PPP over ATM (PPPoA)	X
RFC 2684 routed and bridged (formerly RFC 1483)	X
Transparent bridging	X
IP routing	X
Routing Information Protocol (RIP), RIPv2	X

	Cisco SOHO 90 Series Routers
QoS	
ATM QoS—ATM traffic UBR, VBRnrt, and CBR with per-VC queuing and traffic shaping	X
Per-VC queuing and shaping	X
Ten permanent virtual circuits (PVCs)	X
Security	
Route and router authentication	X
Password Authentication Protocol (PAP), Challenge Handshake Authentication Protocol (CHAP), Local Password	X
Generic routing encapsulation (GRE) tunneling	X
IP basic and extended access lists	X
Stateful inspection firewall	X
IPSec 56-bit encryption	X
Software-based IPSec 3DES encryption	X
Multiuser IPSec pass-through (TCP and unencapsulated)	X
Multiuser PPTP pass-through	X
Standards-based encryption (STAC) compression	X
Ease of Use and Deployment	
CRWS	X
Cisco Configuration Express	X
Management	
SNMP, Telnet, console port	X
Syslog	X
SNTP client and server	X
Trivial File Transfer Protocol (TFTP) client and server	X
Service assurance agent for service monitoring	X
ATM fault management Operation, Administration and Maintenance (OAM) (F5)—Segment continuity check, segment and end-to-end loopback, and Interim Local Management Interface (ILMI) support	X

	Cisco SOHO 90 Series Routers
Dying Gasp	X
ISDN BRI ST port for out-of-band management with an ISDN line	X
Address Conservation and Allocation	
NAT many to one (PAT)	X
NAT many to many (multi-NAT)	X
IP Control Protocol (IPCP) address negotiation and subnet delivery	X
Dynamic Host Control Protocol (DHCP) client address negotiation	X
DHCP client and server	X
DHCP relay	X

Table 5. Cisco SOHO Series—DSLAM Interoperability

DSLAM	Chipset	Interoperability Status	Comments
Alcatel ASAM 1000	AME	Yes	-
Alcatel 7300	AME	Yes	-
Lucent Stinger	AME	Yes	-
ECI	ADI 918	Yes	UR-2 compliant
ECI	ADI 930	Yes	UR-2 compliant
Siemens XpressLink 2.0	TI	Yes	UR-2 compliant
Siemens XpressLink 2.1	TI	Yes	UR-2 compliant

REGULATORY AND STANDARDS COMPLIANCE

The Cisco SOHO 96 router is available for worldwide deployment in countries that have service providers deploying ADSL over ISDN services.

Safety

- UL 1950/CSA 950-95, Third Edition
- IEC 950: Second Edition with Amendments 1, 2, 3, and 4
- EN60950: 1992 with Amendments 1, 2, 3, and 4
- CSO3, Canadian Telecom requirements
- FCC Part 68 U.S. Telecom Requirements
- AS/NZS 3260:1996 with Amendments 1, 2, 3, and 4
- ETSI 300-047
- TS 001 with Amendment 1
- EMI
- AS/NRZ 3548: 1992 Class B

- CFR 47 Part 15 Class B
- EN60555-2 Class B
- EN55022 Class B
- VCCI Class II
- ICES-003, Issue 2, Class B, April 1997S
- IEC 1000-3-2

Immunity

- IEC 1000-4-2 (EN61000-4-2)
- IEC 1000-4-3 (ENV50140)
- IEC 1000-4-4 (EN61000-4-4)

CISCO SOHO 96 ROUTER ADSL SPECIFICATIONS

ST-Micro (formerly Alcatel Micro Electronics) DynaMiTe ADSL Chipset

- ETSI 101-388 v1.2.1 ADSL over ISDN
- Annex B ITU ADSL over ISDN support (Planned)
- UR-2 Specification (Deutsche Telekom)

The chipset does not provide interoperability with carrierless amplitude modulation/phase modulation (CAP)-based ADSL lines.

ISDN SPECIFICATIONS

- Interoperable Switched 56: 2 x 56 kbps (precompressed)
- Single- and multipoint configurations
- Compatible with data or voice B-channel ISDN switch types
- CTR3 (ETSI, NET3)
- VN3/4/5 (France)

Physical Specifications

- Dimensions (H x W x D): 2.0 x 9.7 x 8.5 in. (5.1 x 24.6 x 21.6 cm)
- Weight: 1.48/1.5 lb (0.67/0.68 kg)

Environmental Operating Ranges

- Nonoperating temperature: -4 to 149°F (-20 to 65°C)
- Nonoperating humidity: 5 to 95%, relative humidity (noncondensing)
- Nonoperating altitude: 0 to 15,000 ft (0 to 4,570 m)
- Operating temperature: 32 to 104°F (0 to 40°C)
- Operating humidity: 10 to 85%, relative humidity (noncondensing)
- Operating altitude: 0 to 10,000 ft (0 to 3,000 m)

Power Ratings

- AC input voltage: 100 to 250 VAC, 50 to 60 Hz
- Power consumption: 6 to 10W (idle-maximum consumption)
- Power supply rating: 15

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