Lucent Technologies
Bell Labs Innovations

CellPipe™ 50

The CellPipe 50 Series is a family of ATM-based router/bridges that use digital subscriber line (DSL) technology to accelerate applications such as Internet access, Web-based research, videoconferencing, voice-over-IP, ecommerce, Web hosting, and more. Based on Lucent's award-winning Pipeline® technology, these full-featured router/bridge devices deliver all the capabilities needed for high-quality, high-speed, and high-bandwidth remote network connections.

High-speed, high-bandwidth solutions

The CellPipe 50 Series router/bridge devices provide a versatile, cost-effective solution for enterprise and home office settings. These compact units give users the speed and power to access a full range of high-bandwidth applications. Users can connect simultaneously to as many as eight different locations to send files, browse the Web, upload graphics, or simply read email. Features include:

- **Concurrent routing and bridging.** By combining routing and bridging functions in one unit, the CellPipe 50 devices provide one configurable solution for accessing any LAN and the Internet. These router/bridge units support a 10Base-T Ethernet interface that allows for efficient connections to individual computers or multiple computers for local area networking.
- **Multiprotocol support.** Support for Point-to-Point Protocol (PPP), TCP/IP, IPX, AppleTalk* and ATM provides flexibility and investment protection for carriers as well as subscribers.
- **Network Address Translation.** The Network Address Translation (NAT) capability assigns a transparent network address to each CellPipe unit. This enables end users to access the Internet with unregistered network IP addresses for the duration of a session. And, NAT eliminates the cost and complexity of obtaining and owning dedicated IP addresses.
- **Embedded management functionality.** The CellPipe 50 units provide embedded SNMP for streamlined monitoring, management, and configuration.
- **Automatic Configuration with TURN-UP.™** These units also support TURN-UP, an installation utility that enables timesaving configuration. TURN-UP automatically provides the CellPipe 50 with configuration information through any router or bridge that can terminate a Virtual Circuit (VC) or PPP connection on an Internet service provider's (ISP's) network. TURN-UP helps users get their CellPipe 50 units up and running with minimum time and effort. It also eliminates the need for service provider truck rolls and provides a mechanism for centrally managing customer configurations.

The CellPipe 50 Series includes three models that address a complete range of user needs for high-speed Internet access and data delivery.

Symmetric DSL Models

The CellPipe 50S and 50H support different "flavors" of symmetric DSL (SDSL and SHDSL respectively) technology. These devices use existing single-pair copper wiring to transmit and receive data at speeds up to 2.3 Mbps based on distance. Because they send and receive data at the same rate in both directions, the CellPipe 50S and 50H are ideal solutions for collaborative computing, videoconferencing, and other applications where identical upstream and downstream speeds are necessary.

The CellPipe 50S and 50H can accommodate up to 21,000 feet of twisted-pair wiring connecting them to xDSL central office equipment (COE), such as the Lucent Stinger® DSL access concentrator. This is a full 10,000 feet more than conventional devices support, allowing Internet service providers (ISPs) and carriers to reach more customers. In addition, the new CellPipe 50H-4 will support 4 wire SHDSL—this means data rates up to 4.6 Mbps are supported at even farther distances. These units take advantage of rate-adaptive DSL, which automatically sets the data rate to the highest possible speed based on line quality. This feature frees carriers from the task of manually setting data rates for customers during installation.

Asymmetric DSL Models

The CellPipe 50AS and 50V units support asymmetric types of DSL technology. The 50AS supports ANSI standard T1.413-compliant DMT and G.Lite ADSL while the 50V utilizes the new VDSL standard. These units are fully compatible with external voice splitters to deliver simultaneous DSL and voice services on the same line.

The CellPipe 50AS supports downstream rate of 8Mbps and upstream of 1Mbps in DMT mode, and 1.5Mbps downstream and 512Kbps in G.Lite mode. The 50V supports up to 21 Mbps downstream and up to 5 Mbps upstream. These modems are the ideal residential DSL modem for providing always on voice, video and data services on the same telephone line.

On-board intelligence with TAOS

The CellPipe 50 units are built on the same software as Lucent's Pipeline ISDN routers-Lucent's True Access Operating System (TAOS). At work in thousands of Lucent access concentrators, routers, and switches around the world, TAOS provides expansive management and control capabilities and enables functions such as modem initialization, SNMP agent participation, and statistics gathering.

Centralized network management

The NavisAccess™ platform provides a suite of applications for centralized monitoring and control of Lucent multiservice products, including the CellPipe 50 family. Operating from a single platform, these applications present a complete view of the network from the "big picture" to performance details for an individual port. NavisAccess is a cost-effective solution for streamlined network management and quick deployment of new services.

Comprehensive security for remote networking

The CellPipe 50 products perform extensive security and authentication procedures to provide secure access and transmission for remote networking. These procedures include:

- User authentication with authentication profiles: Password Authentication Protocol (PAP), Challenge Handshake Authentication Protocol (CHAP)
- Token-based security with support for multiple vendors' products
- IPSEC support for building VPNs.
- Transmit and receive packet filtering
- Integrated SecureConnect™ firewall
- Telnet/SNMP management

CellPipe—A family of reliable xDSL solutions

The CellPipe 50 Series is part of the CellPipe family of integrated access devices (IADs), routers, and bridge modems that meet worldwide market requirements for reliable, cost-effective xDSL solutions. From residential users to service providers and resellers, the CellPipe family of products provides the perfect solution for transforming existing copper wire into a high-speed data access medium.

CellPipe Model	xDSL technology supported
CellPipe 50S	SDSL
CellPipe 50H	Second-generation high-speed DSL (HDSL2) and state-of-the-art, industry-standard symmetric DSL G.991.2 (SHDSL). The CellPipe 50H can run on either HDSL2 or SHDSL. HDSL2 support symmetric data speeds up to 1.54 Mbps while SHDSL supports symmetric rates up to 2.3 Mbps.
CellPipe 50H-4	4 Wire SHDSL supporting symmetric speeds up to 4.6 Mbps.
CellPipe 50AS	ADSL, G.Lite
CellPipe 50 V	VDSL

Specifications

Hardware Specifications

Dimensions
8.3 in. x 6.19 in. x 1.25 in.
(14.2 cm x 27 cm x 3.2 cm)

Weight
2.25 lbs. (1.13 kg)

WAN Interface
50V: VDSL Interface
50AS: ADSL Interface
50H: HDSL2/SHDSL Interface
50H-4: 4 Wire SHDSL Interface
50S: SDSL Interface

RJ-11 Physical Interface

LAN Interface
50AS, 50S, 50H: One 10BaseT Ethernet Port (RJ-45 Jack)

50V, 50H-4: One 100BaseT Ethernet Port (RJ-45 Jack)

Data Rates
50V: VDSL: Up to 21 Mbps downstream, up to 5 Mbps upstream

50AS: G.DMT (full-rate): Up to 8 Mbps downstream, up to 1 Mbps upstream. G.Lite: Up to 1.536 Mbps downstream, up to 512 Kbps upstream

50S: 2B1Q SDSL, Up to 2.3 Mbps bi-directional

50H: SHDSL, Up to 2.3 Mbps bi-directional

50H-4: 4 Wire SHDSL, Up to 4.6 Mbps bi-directional

Analog Telephone Line Support
50V: Cooperates with external splitter
50AS: Cooperates with external splitter

Operating Environment
Temperature: 40°F – 105°F
(5°C – 40°C)

Humidity: 20 – 80% noncondensing

Power Requirements
AC Voltage: 100 – 120 VAC;
200 – 240 VAC

Frequency: 60/50 Hz

Power Consumption: 15 W maximum

Safety Compliance
IUL 1950, CSA 22, EN60950

EMC/RFI Compliance
FCC Part 15 Class B,
EN 55022/CISPR 22 Class B,
ENS0082-1, CE, VCCI

Software Specifications

Protocols Supported
DHCP Server, Client
RFC 1577: Classical IP over ATM
RFC 1483: multi-protocol over AAL5
RFC 1631: Network Address Translation (NAT) RFC 2364: PPP over ATM TCP/IP with RIP1-compatible, RIP2, IPX, AppleTalk routing, standard bridging of all protocols

Security
PAP (RFC 1334, RFC 1994), CHAP, Telnet password, token-based security, packet filtering, Integrated dynamic SecureConnect Firewall, SNMP port management, IPSEC

Management
SNMP, Telnet, syslog, Lucent remote management protocol, direct serial cable connection (DB-9)

Lucent TURN-UP Auto-Provisioning

Traffic Management
VC transmit shaping

To learn more, contact your Lucent Technologies representative, authorized reseller, or sales agent. Or, visit our web site. www.lucent.com

Specifications subject to change without notice.

Printed in the U.S.A.
12/01 • 01-395

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