Livingston's Modular Communications Servers

Versatile and Expandable Network Connectivity.

PortMaster 2E & 2ER
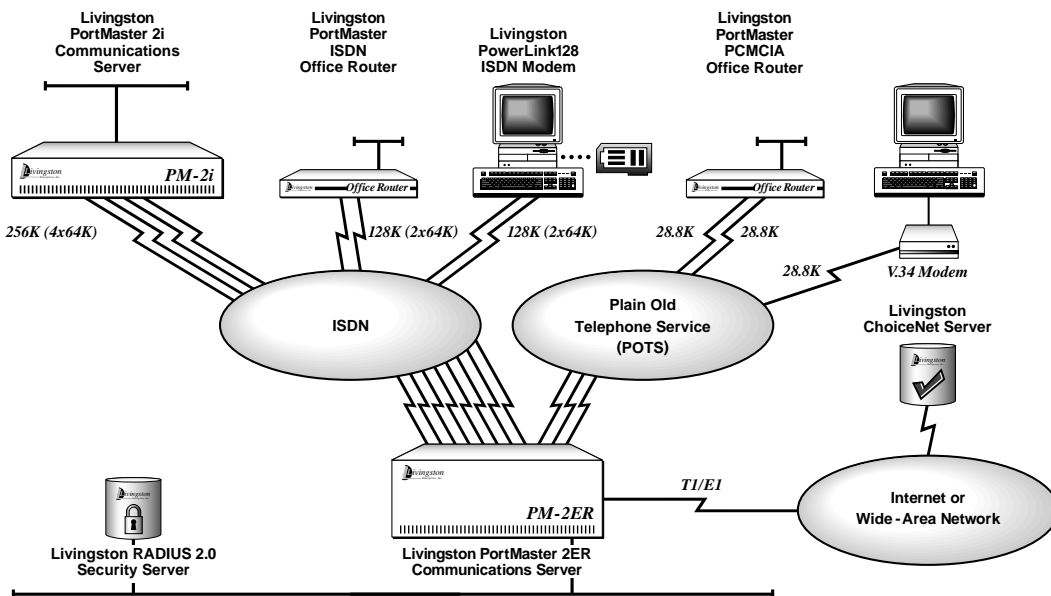
Livingston Enterprises, Inc.

Low-Cost Dial-In Access for ISDN and Analog Services

Another

The PortMaster™ 2E and 2ER Communications Servers are an economical and easily expandable

piece of

solution for securely connecting telecommuters, Internet users, and branch offices to network

resources. These multi-port, multi-service units support user-to-LAN dial-in/dial-out and

LAN-to-LAN multiprotocol routing over both analog and ISDN (Integrated Services Digital

Livingston's

Network) phone lines.

The PortMaster 2E modular communications server comes standard with 10 asynchronous

total

serial ports or 5 ISDN BRI (basic rate interface) ports and two expansion slots that will accept

either two additional 10-port asynchronous modules, two 5-BRI ISDN modules, or one of each.
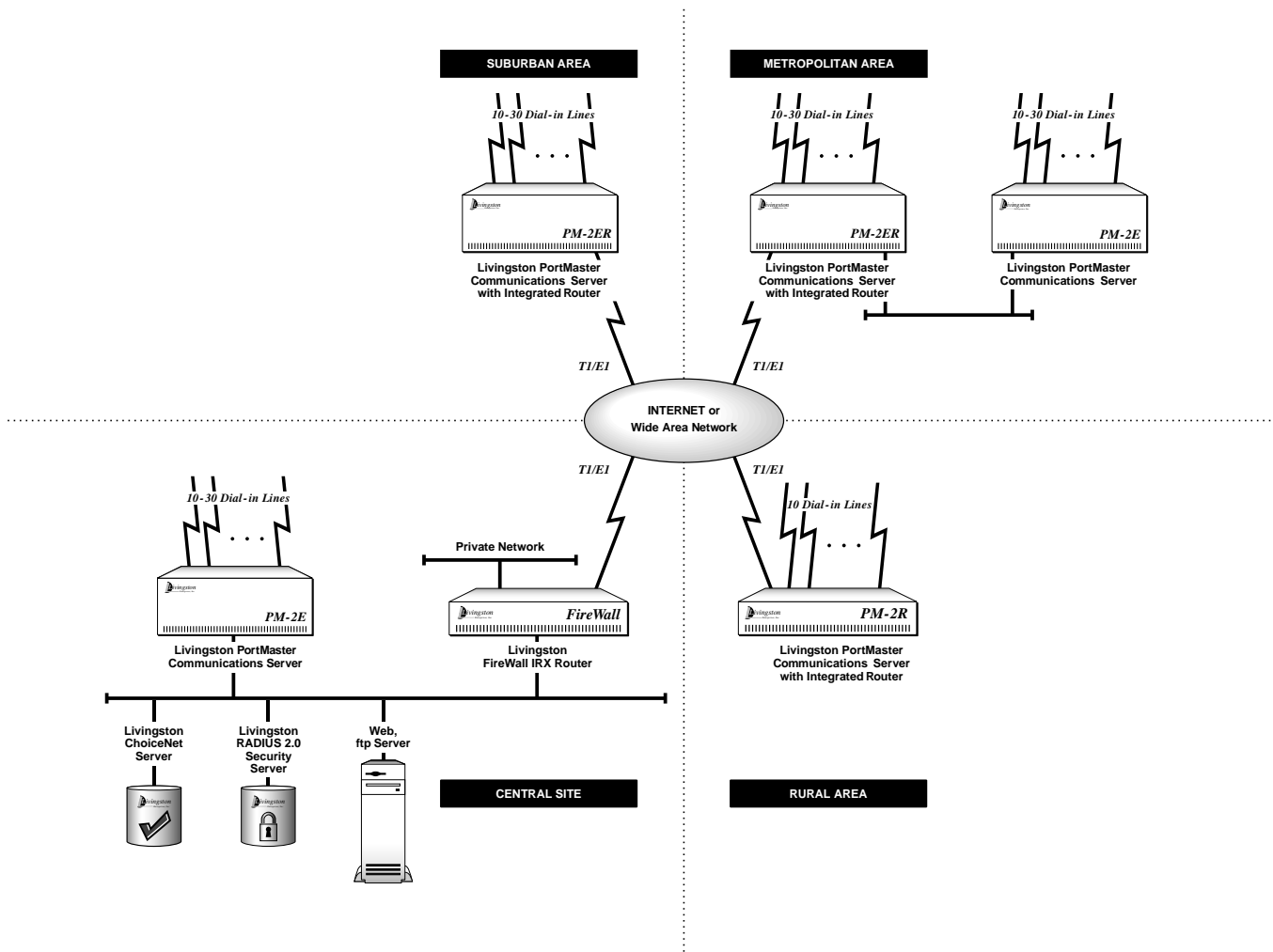
remote

access

solution.

Total Access. Sure and Simple.™

The ISDN modules are available with S/T interfaces or U interfaces with integrated NT-1s (network termination devices). Each of the 5 BRI ports supports two B-channels for a total of 10 64-Kbps B-channels per module. These B-channels can be used as individual ports for dial-in access or can be combined in aggregates of two or more using Multilink PPP (MP). The PortMaster 2ER Communications Server comes standard with 10 asynchronous serial ports and two expansion slots that will accept either two additional 10-port asynchronous modules, two 5-BRI ISDN modules, or one of each. The PortMaster 2ER also includes an additional T1/El synchronous routing port for a leased-line or Frame-Relay connection to an enterprise WAN backbone or Internet Service Provider (ISP). The PortMaster 2ER Communications Server provides an efficient and economical way for ISPs or corporations to provide dial-in access for multiple local points of presence (POPs).

Below:
*In this application, Livingston's **PORTMASTER 2R, 2E AND 2ER COMMUNICATIONS SERVERS, AND FIREWALL IRX ROUTER** are used to create a dial-in service with local points of presence using both analog and ISDN lines.*

Easy Internetworking

Both the PortMaster 2E and PortMaster 2ER use Livingston's reliable ComOS™ operating system software. Developed specifically for remote access applications, Livingston ComOS has been continually tested and enhanced since 1989. The most solid and efficient remote-access platform available, ComOS technology is used in all Livingston PortMaster Communications Servers, IRX™ Routers, and PortMaster Office Routers.

Like all other PortMaster products, the PortMaster 2E and 2ER support the Livingston-invented RADIUS (Remote Authentication Dial In User Service) protocol for maximum dial-in security. They also feature advanced firewall filtering, which allows you to control exactly what type of traffic can enter and exit the network. And they include Livingston's ChoiceNet™, a centralized filtering technology that enables you to choose which Internet sites, applications, and services you wish to make available to your users. The combination of ChoiceNet, RADIUS, and our firewall filtering is ideal for building customized Internet service applications.

The PortMaster 2E and PortMaster 2ER are both easy to configure and manage with Livingston PMconsole™ graphical administration software.

SPECIFICATIONS

GENERAL

Flash memory
Local or network booting via tftp
SNMP (MIB2)
Reverse Telnet
Ping utility
Traceroute utility
IPX SAP filtering
Multi-line load balancing
Auto-detect dial-out authentication scripts
Domain name service or network information service
Single or multiprotocol support selectable on each port
Novell keep-alive spoofing
PPP auto detect
Session idle timers
Clear channel TCP
BOOTP

SUPPORTED PROTOCOLS

TCP, IP, IPX, SPX, SAP, RIP, SLIP, CSLIP,
ICMP, UDP, ARP, telnet, rlogin, PPP (fully compliant:
RFC 1331; RFC 1332; RFC 1334; RFC 1618;
backward compatible: RFC 1171;
RFC 1172), MP (RFC 1717), V.120

ROUTING SUPPORT

Concurrent TCP/IP and Novell IPX routing
On-demand dial-up routing
Unnumbered WAN links for TCP/IP
Static routes
On-demand, continuous connection, and
          manual/scheduled dialing
Dial connections support "chat scripts"
Dynamic routing using RIP for IP and IPX
RIP support on a per-interface basis
Trusted router RIP filtering
Support for IP host, subnet, and network routes
Automatic packet queuing and redial
Proxy ARP

SECURITY

Local username/password database
Dialback
PAP and CHAP authentication
Inbound/outbound IP and IPX packet filters
Central authentication via RADIUS protocol
Per-user authorization filters (source address, destination address, protocol,
          protocol service [Web, e-mail, ftp], status of connection)
User accounting (audit trails)
ChoiceNet centralized filtering technology

ASYNCHRONOUS PORT SUPPORT

LAN-to-LAN dial-on-demand routing
Concurrent TCP/IP and Novell IPX dial-in
Standard dial-up phone lines (using V.32bis and V.34 modems)
ISDN (using terminal adapter)
Local and remote console
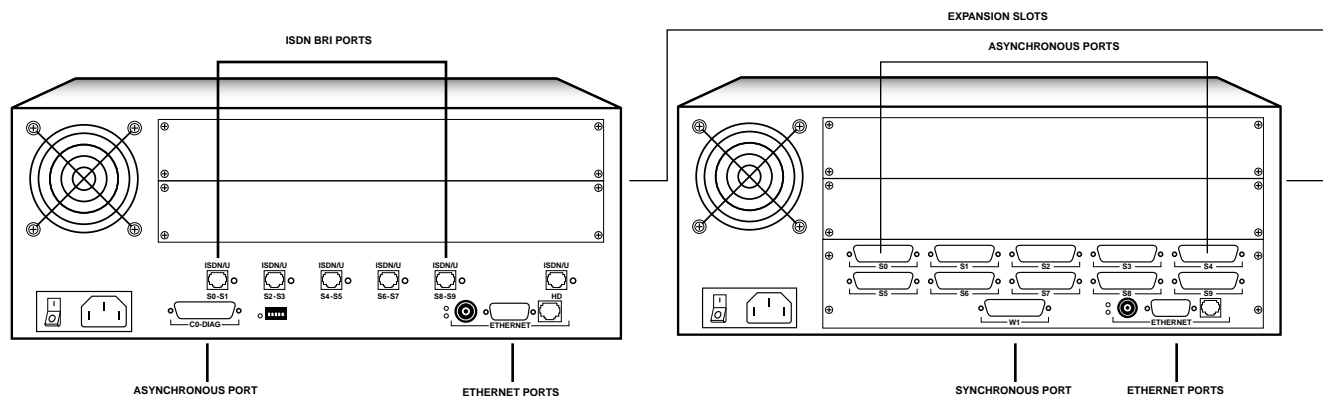Dial backup of ISDN WAN ports

ISDN SUPPORT

Standards: ITU-T Q.920, Q.921, Q.922, Q.930, Q.931, Q.932
Certifications: NET3/ICTR3, JATE*
Switch compatibility: National ISDN-1(NI-1), AT&T 5ESS custom,
          Northern Telecom DMS-100 custom, Euro-ISDN (ETSI),
          1tr6, German National ISDN, VN4, NTT INS-Net64*,
          KDD*
Compatible with CSD/CSV services
V.120 ISDN-to-DTE terminal rate adaption
AT command emulation for ISDN dial-out
V.120/Synchronous PPP autodetect
Digital dialtone diagnostics
Multilink PPP with dynamic bandwidth extensions
          *pending approval

SYNCHRONOUS PORT SUPPORT

LAN-to-LAN routing
Frame Relay
Leased-line services (56K, 64K, fractional T1/E1, T1/E1)
Switched 56 service
V.25bis dialing

EXPANSION SLOTS

ASYNCHRONOUS PORTS

ISDN BRI PORTS

ASYNCHRONOUS PORT　　　　ETHERNET PORTS

SYNCHRONOUS PORT　　　ETHERNET PORTS

*Back panel of the **LIVINGSTON PORTMASTER 2E** Communications Server with a 5-BRI ISDN base module (U interface). This product is also available with an asynchronous 10-port base model. The other two slots can be configured with either 10-port asynchronous or 5-BRI ISDN modules in any combination (see examples below).*

*Back panel of the **LIVINGSTON PORTMASTER 2ER**, which comes standard with 10 asynchronous ports and a T1/El synchronous routing port. The two expansion slots will accept either additional 10-port asynchronous modules or 5-BRI ISDN modules (see examples below).*

HARDWARE

One Ethernet port with three switch-selectable interfaces:
　　Built-in 10BaseT transceiver (twisted pair)
　　Built-in 10Base2 transceiver (thin Ethernet)
　　AUI connector
10, 20, or 30 asynchronous ports
　　Up to 115.2 Kbps
　　RS-423/232 interface
　　DTR, DSR, DCD, RTS, CTS, TxD, RxD
　　DB-25 connectors
5, 10, or 15 (PortMaster 2E only) BRI ports
　　Per BRI port: S/T interface or U interface (with integrated NT1),
　　　　two 64 Kbps B-channels, one 16-Kbps D-channel,
　　　　10 B-channels and 5 D-channels per module
　　U interface only: One high-density (HD) connector for single-cable
　　　　connection to punchdown block per 5 BRI ports
　　　　(10-foot cable included)
One synchronous serial port (PortMaster 2ER only)
　　RS-232, V.35, X.21, electrical interfaces
　　Speeds up to T1/E1
　　DB-25 physical interface
　　V.35 physical interface with supplied adapter cable
　　External clocking (from CSU/DSU)
Dimensions
　　Length: 11.5 in (29.2 cm)
　　Width: 16.8 in (42.7 cm)
　　Height: 6.5 in (16.5 cm)
　　Weight: 18.9 lb (8.6 kg)
Power Requirements
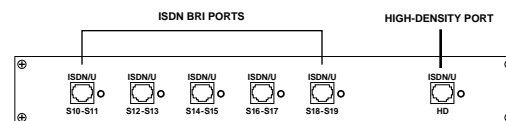　　110 VAC ± 10%, 47-63 Hz
　　240 VAC ± 10%, 47-63 Hz
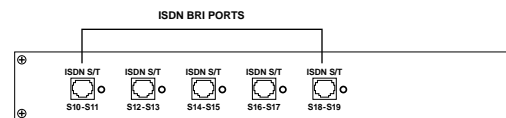Environmental Operating Range
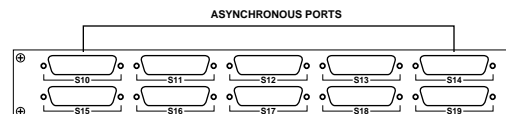　　Temperature: 41F to 113F, 5C to 45C
　　Humidity: 20% to 80%
Agency Approvals
　　FCC, UL, CSA, CE

ISDN BRI PORTS　　　　HIGH-DENSITY PORT

*Back panel of a **5-BRI ISDN MODULE WITH U INTERFACE.***

ISDN BRI PORTS

*Back panel of a **5-BRI ISDN** module with S/T interface.*

ASYNCHRONOUS PORTS

*Back panel of a **10-PORT ASYNCHRONOUS MODULE.***

960-1017B 5/96