NETLINK™ ACCESS PRODUCTS

The Patton 2784 Network Access Unit provides dial-in remote access ports, Frame Relay VPN, PABX, Ethernet, IP Router over a single T1/E1 network port

Network Access Unit

Patton 2784 NAU

The Patton 2784 Network Access Unit is a multiservice, integrated access platform that enables service providers to integrate dial-in modem users, Internet, Extranets, Corporate Intranets or IP LANs–using Ethernet, Frame Relay, or PPP–over a single network backbone connection.

Network connectivity has developed into an integral part of today's business infrastructure. The number of connected users directly translates into an increased demand for WAN access. Private enterprise networks, incumbent local exchange carriers, and competitive local exchange carriers (CLEC's) have all found that, in order to compete effectively, they must offer products and services which form an integrated solution.

By providing an integrated business solution, carriers now have the opportunity to leverage technology to further their own business objectives. By eliminating multiple pieces of equipment, application performance is enhanced. Through simplified configuration and network management, maintenance and support costs are dramatically reduced.

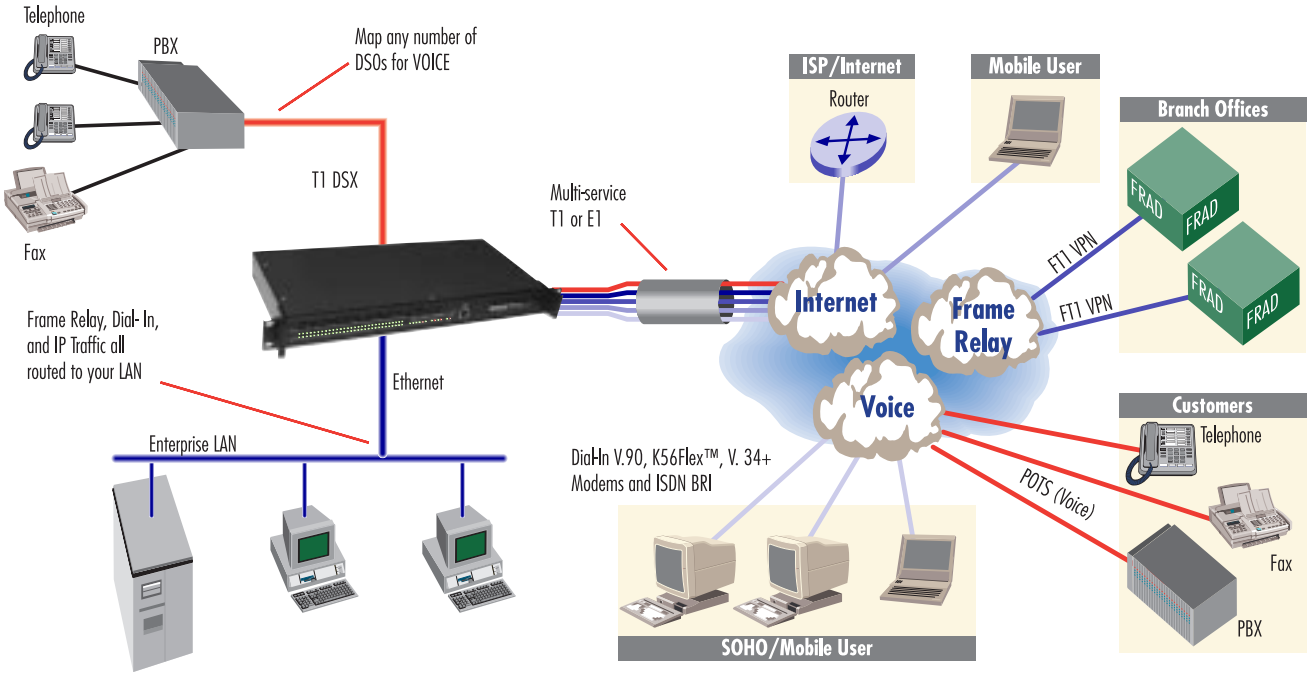
VPN Support Frame Relay
Built in FRAD (RFC-1490) for creating data VPN's

IP Routing
Provides IP LAN connection for all users

Drop-and-Insert
PABX support for Voice and Fax calls

Dial-In Modems
1U-high platform with DSP architecture for analog and digital modems

SNMP / HTTP Management
Use SNMP or HTTP to completely configure, control, and manage all subsystems



PATTON Electronics Co.

Patton 2784 Network Access Unit

Product Overview

The 2784 NAU enables the small/medium-size enterprise to take advantage of multiservice networking using a single multifunction platform for service concentration. The enterprise customer can now employ a single carrier facility (T1 or E1) for voice, data, Internet, LAN and remote access applications.

Frame Relay virtual circuits allow interoffice communications without using additional leased lines, dramatically reducing both equipment and facilities' costs. Frame Relay's ability to combine multiple streams of "bursty" data over a single physical interface provides the advantage of high bandwidth and wide area connectivity.

The **Drop-and-Insert** port serves an attached PABX for local voice calls to the public switched telephone network. Through user configurable timeslot selection, the 2784 NAU can process Voice and **Modem** calls by routing a call to either the PABX or to an internal modem for dial-in remote access (RAS).

By answering and terminating both analog (V.90, K56Flex™, V.34+) *and* digital (ISDN) calls, the 2784 functions as a **Remote Access** server. Each call is processed by a single DSP functioning as a digital modem. PPP/SLIP users easily become an attached node on the network. Built-in filtering offers security over users' activity on the network.

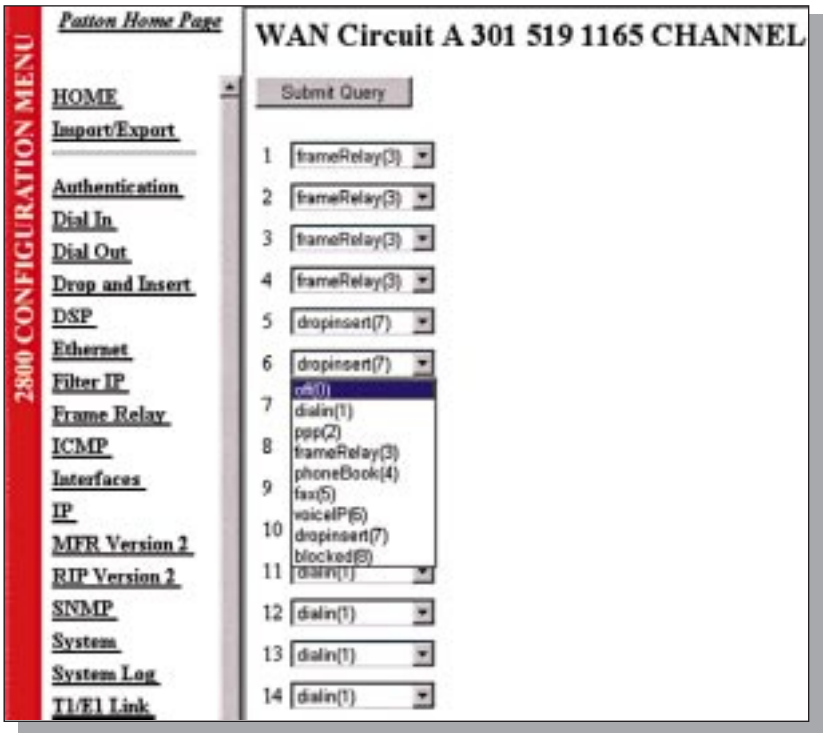
IP Routing permits access of local area network traffic either to remote offices or to the Internet through the built-in routing engine. IP datagrams, routed by the CPU, are then forwarded to a FR/PPP WAN port or a 10Mbps Ethernet LAN for delivery.

SNMP/HTTP Connection Management

The 2784 NAU provides for extensive connection management and operator control from a variety of local and remote interfaces. Each 64kbps DS0 can be configured to support six unique services–all using an easy-to-learn GUI.

Management interfaces are presented through a built-in SNMP agent, an embedded HTTP Web server, or via a standard TELNET session. Access, with security through multi-permission passwords, is accomplished through the RS-232 console port, Ethernet port, Frame Relay port, or through any dial-in port.

The built-in HTTP server allows each 2784 management screen to appear as an intuitive Web page to the user. Operators can configure, control, monitor or receive status on any 2784 parameter–from any PC.

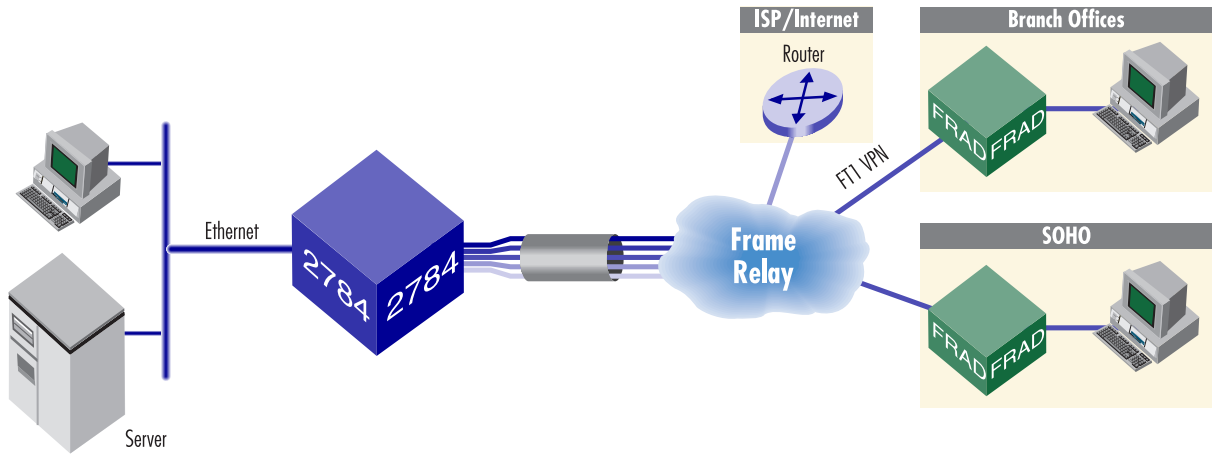


Patton 2784 NAU Applications

Frame Relay

The 2784 NAU offers a flexible and cost-effective network access solution using Frame Relay over a multi-service T1/E1 connection. Designed to be simple and efficient, Frame Relay is a data networking technology for connecting remote offices over the Wide Area. While eliminating the need for individual and expensive leased lines, Frame Relay provides distance insensitive connections to remote networks. Connectivity is established through logical end-to-end connections [Permanent Virtual Circuits (PVCs)] between the 2784 and the remote office.

Frame Relay provides multiple PVCs over a single physical circuit, which allows the 2784 to forward data over those connections to its intended destinations. Using RFC-1490 multiprotocol encapsulation and the 2784's sub-interface architecture, each virtual circuit is multiplexed over a single physical interface. The 2784 NAU scales to support additional connections without adding to capital equipment costs.



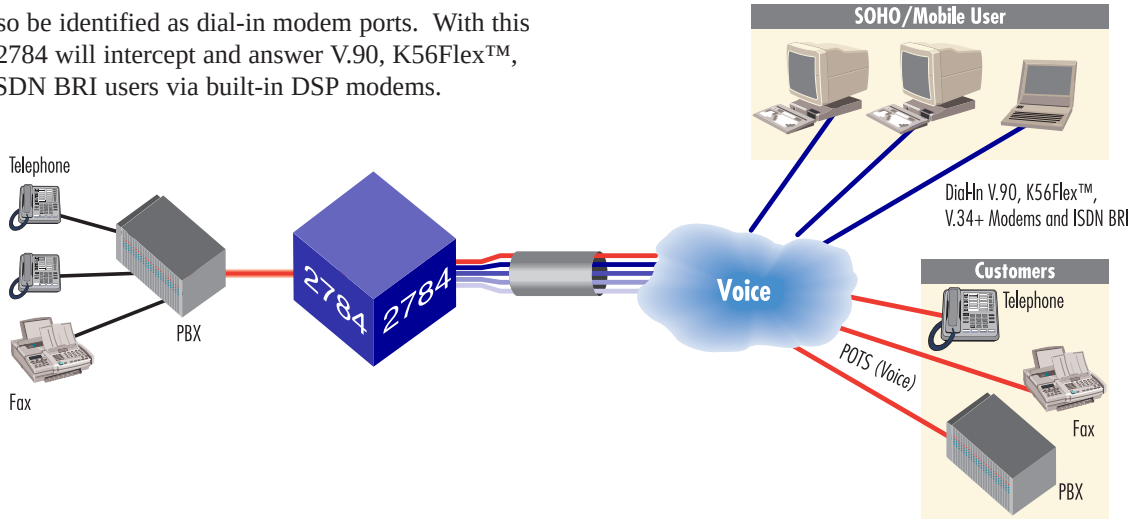
By combining the capabilities of a CSU/DSU, FRAD and router, the 2784 provides scalability without the additional costs of multiple pieces of equipment.

Corporate Voice Integration

The 2784 NAU provides integrated voice support by presenting up to 24 voice/fax calls onto the T1 DSX-1 Drop-and-Insert port. The user may select the number of channels (1-24 voice/fax calls) to be "dropped" onto the PABX port by customizing the DS0 channel selection configuration through the SNMP/HTTP NMS (see screen snapshot, opposite).

DS0s can also be identified as dial-in modem ports. With this facility, the 2784 will intercept and answer V.90, K56Flex™, V.34+ and ISDN BRI users via built-in DSP modems.

This allows the 2784 to minimize costs and maximize facilities by answering remote access calls within the 2784, while switching calls to the PABX to handle corporate voice–all at the same time. Now users can call the corporate voice *and* data networks, using different telephone numbers on the same T1.

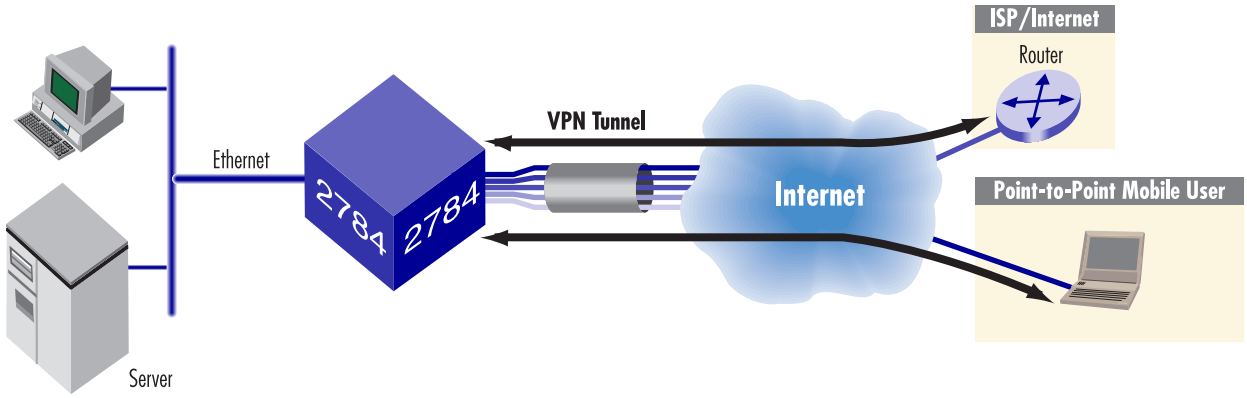


Virtual Private Networking

Flat rate pricing from service providers results in significant cost savings when comparing leased-line services with public facilities from carriers. As a cost-effective alternative to direct dial-in connections or leased lines, Virtual Private Networks (VPNs) create a new telecommunications capability by providing secure remote access across the public Internet or Frame Relay network.

secure intranet access using industry standard Layer 2 Tunneling (L2TP) and IP Security (IPSec) VPN technology.

VPN's support secure remote access to the home network LAN. A secure path, or "tunnel", is set-up between the 2784 and the end user. Once the session is established, applications function as though a direct connection to the local LAN exists. Tunneling encapsulates private intranet traffic into the Internet,



By permitting the enterprise to use a public data network, VPNs take advantage of the Internet's global presence. Using the Patton 2784 NAU, mobile and SOHO users can create

while security enhancements control user authentication, authorization and encryption to assure confidentiality of all private information.

Patton 2784 NAU	
Modem modulations	V.90 • K56Flex™ • V.34 Annex 12 • V.34 • V.32bis • V.32 • V.23 • V.22 • V.22bis • V.21 • Bell 212A • Bell 202 • Bell 103 • EIA-PN-2330 • V.8 • V.8bis • Sync/async receiver/transmitter for V.14 • V.42/V.42bis error correction & compression.
PSTN signalling	E1 Primary Rate • E1 MFCR2 (R2) • T1 Primary • T1 Robbed bit with Loop/Ground Start or E&M Wink Start
Telecom certification	CTR-4 (Euro-ISDN) • INS1500 (Japan) • TSO14 (Australia) • NI-1 • Lucent 5ESS • NorTel DMS (USA)
Homologation received	CEX-168 • EN60950 • IEC950 • UL1950 [NRTL] • FCC Part 15A • FCC Part 68B • CS-03 • ACA TS038 • CTR-4
Management services	HTTP • SNMP • TELNET Dial-in and Ethernet or RS232 console port • SYSLOG client • Remote software upgrade via FTP • User configurable login prompts and banners • DHCP for IP address management and conservation
Authentication	RADIUS • PAP/CHAP • Username/Password and Static Users Database
Software upgrades	Achieved through Flash upgrades via FTP (upgrades available from www.patton.com)
Protocol services	TCP/IP suite with extensive protocol statistics • ICMP/TFTP/FTP/RLOGIN/TELNET • Ethernet ARP, Proxy ARP and RARP protocols • point-to-point protocol (PPP) • SLIP protocol • Van Jacobson TCP header compression PPP address and protocol compression • RADIUS authentication and accounting, with support for primary and secondary servers • RIP and RIPv2 dynamic route distribution • User configurable static routes • TCP clear connection
Frame Relay	LMI T1.617 Annex D • LMI Q.922 Annex A • Multiprotocol encapsulation via RFC 1490 • 32 PVCs • User configurable timeslots assignments • User static designation of far end IP address • Inverse ARP • RFC 1315 MIB support
Security	L2TP (Layer 2 Tunneling Protocol) • IPSec (IPSecurity) - DES, PPP PAP/CHAP • RADIUS (RFC 2138) • Packet Filtering

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