G.SHDSL FR/PPP Over ATM IAD
Patton Model 3086FR

Combines FRF.5 and FRF.8's Frame Relay/ATM conversion with G.SHDSL technology in a compact, high performance subscriber unit for multi-service, revenue generating, DSL deployment

Frame Relay to ATM Conversion
Connect FRADS, routers or any Frame Relay devices to high speed ATM core networks using inexpensive DSLAM ports

Built-in Ethernet/IP Router Standard
With Patton's FlexIP architecture, route from any to any port using FR, PPP, Ethernet, and ATM

Firewall
The 3086FR comes standard with Intrusion Detection (IDS), Access Control Lists (ACL), IP & port filtering and NAT/PAT

Flexible Interface options
V.35, X.21, or T1/E1 fulfills most interconnection needs. 10/100 Ethernet comes standard on all units

Interoperable with Third-Party DSLAMs
Take advantage of Patton feature richness to deploy multiple revenue generating services over any third-party DSLAM

WWW/SNMP Manageable
Built-in VT-100 console port makes setup a snap. Use the embedded HTTP/SNMP agent to manage the Model 3086FR from anywhere in the world.

The Patton Model 3086FR IAD combines the latest advances in high speed DSL technology, G.SHDSL, with a potent IP, FR, PPP and ATM core facilitating simultaneous connection of legacy Frame Relay devices as well as routed IP services to high speed ATM networks.

Based on the European Telecommunications Standardization Institute (ETSI) and International Telecommunications Union (ITU) G.SHDSL G.991.2 standard, the Patton 3086FR enables 2.3 Mbps speeds at nx64 (n=1..36) over a single pair of wires. The 3086FR boasts a dual subscriber interface with a standard 10/100 Ethernet and a choice of Synchronous-Serial V.35, X.21 or T1/E1 ports. Together, these interfaces can be concurrently configured for FR-to-ATM conversion using FRF.5 and FRF.8, as well as IP routing or Ethernet bridging—all in one compact package.
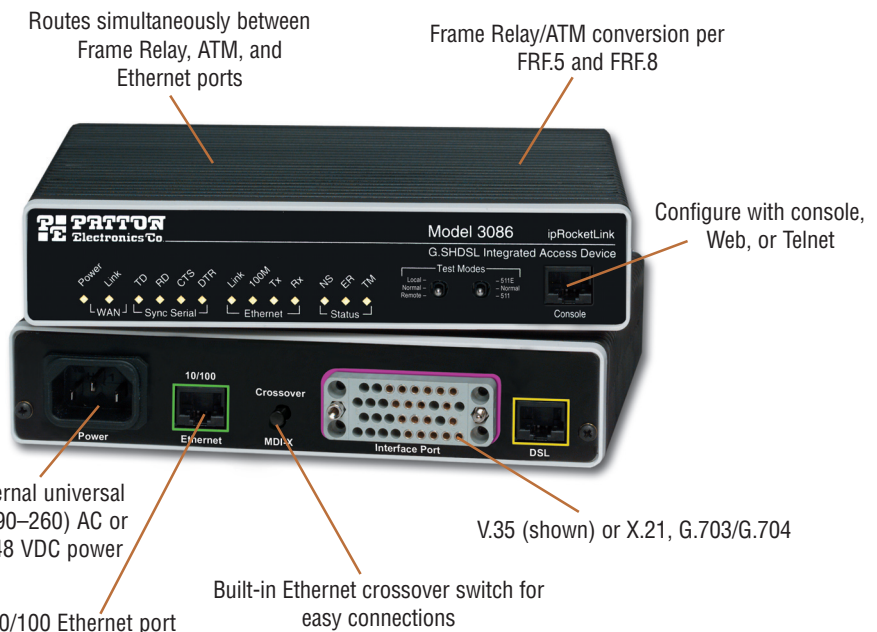
FR traffic from the serial interface is converted into ATM according to FRF.5 or FRF.8 Interworking agreements. The IP service's module offers concurrent support for Frame Relay, PPP, Ethernet, and ATM protocols, the 3086FR can route data to and from any of the three interfaces (Ethernet, serial, and G.SHDSL) simultaneously.

The 3086FR connects seamlessly to any third-party DSLAM. Or you can connect it to another 3086FR over G.SHDSL for back-to-back configurations.

The 3086FR boasts easy installation with console, Telnet, and WWW/SNMP management. It provides bridging and routing functionality, along with advanced IP features such as DHCP and Firewall (IDS, Filtering, NAT). For more information, visit us at www.patton.com.

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ENHANCED WARRANTY

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Routes simultaneously between Frame Relay, ATM, and Ethernet ports

Frame Relay/ATM conversion per FRF.5 and FRF.8

Configure with console, Web, or Telnet

Internal universal (90–260) AC or 48 VDC power

V.35 (shown) or X.21, G.703/G.704

10/100 Ethernet port

Built-in Ethernet crossover switch for easy connections
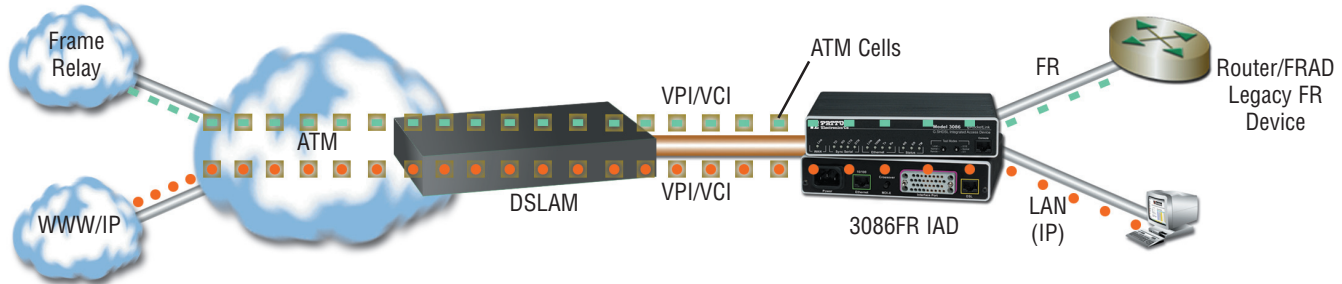
PATTON®

Application—FR and IP traffic over ATM

The 3086FR converts Frame Relay traffic from the serial port into ATM format for transmission over the DSL link. This protocol mapping function makes the DSLAM/DSL CPE network transparent to the Frame Relay service connected to the serial port. Simultaneously, the 3086FR provides a full-service routed or bridged connection between the LAN (connected to the 10/100 Ethernet port) and the supporting DSLAM/ATM network (connected via the G.SHDSL interface).

In the scenario illustrated below, the 3086FR is located at a branch office and encapsulates FR frames received at the serial port into ATM cells for transmission over the G.SHDSL link. In this example, the conversion is done using the procedures specified in the FRF.5

Implementation Agreement. Simultaneously, the 3086FR routes (or bridges) traffic from the Ethernet LAN to the G.SHDSL port, also encapsulated into ATM cells. Traffic from both the Serial and Ethernet ports is sent concurrently over the DSL link. Traffic from each port is delivered on its own ATM virtual circuit, as defined by a unique VPI/VCI combination. This mapping allows the core ATM network to switch the IP traffic to the Internet via a core router. Since the 3086FR supports PPPoE and PPPoA, the traffic can even pass through an authentication server. Finally, the ATM network switches the frame relay traffic to a separate ATM or Frame-Relay termination point.

Specifications*

DSL	G.991.2 ITU G.SHDSL Annex A and Annex B, G.994.1 G.hs Handshaking. nx64 data rates over 2-wire full-duplex to 2.3 Mbps, symmetrical, TC-PAM encoding. Distance of 32,000 ft (9.8 km) at 192 kbps to 18,000 ft (5.6 km) at 2.304 Mbps.
DSL Connection	Shielded RJ-11F isolation per IEC 950, two-wire, 135-Ohm
Ethernet Connection	10/100Base-T, auto-sensing, full/half-duplex operation, built-in MDI-X
Serial Interface	V.35—M/34F, X.21—DB15F (DTE/DCE selectable), T1—RJ48C, E1—RJ48C and Dual BNC, 64 kbps – 2.304 Mbps (interface dependent)
FR to ATM Support	FRF.5 (Frame Relay Network Interworking), FRF.8 (Frame Relay Service Interworking). LMI with ITU Q.933, ANSI T1.617, and Cisco LMI implementation.
Management	EIA-561 (RJ-45) RS-232, VT-100 CLI, TELNET, Embedded WEB/HTTP, SNMP, Logging or SMTP on events: POST, POST errors, line/DSL, PPP/DHCP, IP MPOA AAL5 and Bridged encapsulation RFC 2684 and RFC 1577 IPoATM. LLC/VC Mux support.
ATM Support	UNI 3.0, 3.1, and 4.0 ATM QoS with UBR/CBR/nrt-VBR/rt-VBR and per- VC queuing and shaping. Peak cell rate shaping on a per-VCC basis up to 32 active VCCs I.610 OAM network management including AIS/RDI, loop-back and performance monitoring.
Protocol	Enhanced ILMI 4.0 for auto-configuration of ATM PVCs, IP (RFC 741), TCP (RFC 793), UDP (RFC 768), ICMP (RFC 950), ARP (RFC 826). IP Router with RIP (RFC 1058), RIPv2 (RFC 2453), OSPF (RFC 2328)

Protocol (continued)	Integrated relay agent (RFC 2132/RFC 1542) with 8 address pools. DNS Relay. IGMP v1 and v2. IP-in-IP (RFC-2003) encapsulation, Ethernet Bridging. NAT/NAPT with integrated application support, MultiNat with 1:1 mapping, Many:1, Many:Many mapping, NAT Port/IP redirection and mapping.
Security	DoS Detection/protection. Intrusion detection, Logging of session, blocking and intrusion events and Real-Time alerts, Password protected system management with a username/password for console and virtual terminal, Packet filtering firewall for controlled access to and from LAN/WAN. Support for 255 rules in 32 filter sets. 16 individual connection profiles. Access list determining up to 5 hosts/networks which are allowed to access management system SNMP/HTTP/TELNET
Indicators	13 LEDs: Power, DSL Link; Sync Serial: TD, RD, CTS, DTR; LAN: TX, RX, 100M Link; Status: NS, ER, TM.
Power Supply	Internal universal 100–240 VAC ±10% input or 48 VDC input. Optional external power available.
Compliance	FCC Part 15A, FCC Part 68 (3086FR/RIT and /RIK), CE Mark, EMC Directive 89/336/EEC, Low-Voltage Directive 73/23/EEC, EN60950, EN55022 (CISPR 22)
Environment	Temperature: 32–122°F (0–50°C); Humidity: 5–90%, non-condensing
Dimensions	7.3" x 6.6" x 1.62" (185mm x 168mm x 41mm).

* Specifications subject to change without notice.