SPS-3HS

Miniature Multiprotocol FRAD/PAD

FEATURES

- 3-port FRAD/PAD and multiprotocol packet switch
- Protocols supported: Frame Relay, X.25, X.32, HDLC, SLIP and Async
- IP support:
  - IP routing
  - Standard IP encapsulation over Frame Relay (RFC 1490), or X.25 (RFC 1356) networks
- SNMP management using RADview PC/UNIX platforms
- Multiprotocol links with data rate of up to 2 Mbps

DESCRIPTION

- SPS-3HS is a 3-port FRAD/PAD and multiprotocol packet switch intended for small remote branch offices.
- Typical applications include: access for the small office in a multi-protocol environment / protocol converter (see *Figure 1*), and rate converter (see *Figure 2*).

FRAME RELAY

- SPS-3HS provides access to public or private Frame Relay networks.
- As an access device to a Frame Relay network, the unit supports Async, HDLC, IP, X.25 and Frame Relay traffic.
- The unit supports BECN/FECN signalling for congestion avoidance.
- A unique funneling mechanism adjusts feeder throughput to CIR levels.
- LMI and ANSI PVC management protocols are supported in compliance with ANSI T1.606, T1.618, T1.617 Annex D, and ITU Rec. Q.922, Annex A.
- SPS-3HS supports CLLM management protocol and complies with ITU REC Q.933, Annex A.

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X.25

- X.25-configured links support permanent virtual circuits (PVCs) or switched virtual circuits (SVCs). Link packet size is up to 4096 bytes.
- SPS-3HS supports both mandatory and additional ITU X.2 facilities.
- Dial-up X.25 links are supported via a dial-up modem controlled by a DTR signal.
- SPS-3HS supports X.25 multicasting.

X.32

- SPS-3HS supports X.32 protocol for a dial-up X.25 link. This enables users to access an X.25 network remotely, via a dial-up modem with X.32, or to use the backup dial-up link for an X.25 or Frame Relay network. The X.32 protocol supports V.25 bis commands.

HDLC TRANSPARENT ACCESS

- Multiprotocol links can be programmed to operate with transparent HDLC for connecting bridges, routers and other HDLC communication devices over X.25 or Frame Relay networks. The HDLC traffic is encapsulated over X.25 or Frame Relay, providing end-to-end transparent operation.

APPLICATIONS

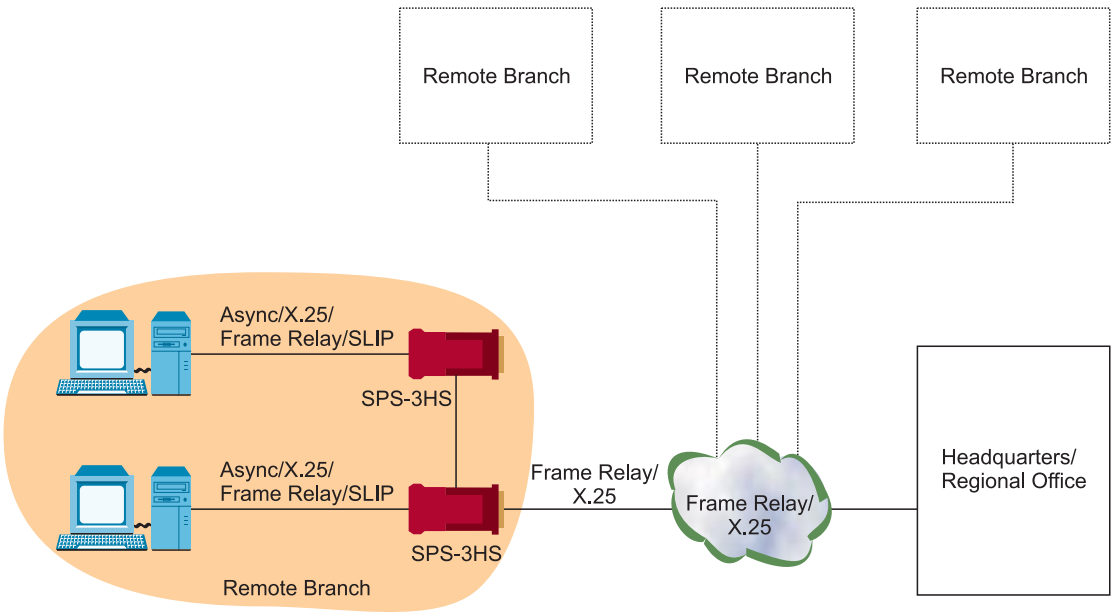

Figure 1. Access for a Small Office (Protocol Conversion)

IP

- Static IP routing is supported. IP packets are routed to their destination via SLIP, X.25 or Frame Relay link, according to the IP address.
- The IP protocol can be encapsulated over a Frame Relay network, according to RFC 1490, or over an X.25 network, according to RFC 1356.
- A management station can be connected directly to SPS-3HS, using the SLIP protocol.

NETWORK MANAGEMENT

- SPS-3HS contains an SNMP agent, which enables remote configuration, collection of statistics, status reports, and diagnostics. The management agent can be programmed to periodically send statistics and status reports to a maximum of 5 management stations.
- Configuration, monitoring and controlling of all network resources can be performed from a RADview-PC or HPOV/UNIX SNMP management station.
- SPS-3HS SNMP agent supports private and standard MIBs, including MIB II with RFC 1213, RFC 1381 and RFC 1382 for X.25, and RFC 1315 for Frame Relay.

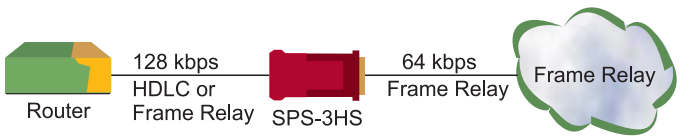

Figure 2. SPS-3HS Serving as a Rate Converter Between any HDLC-based Protocols

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SPECIFICATIONS

COMMUNICATIONS

- **Number of Ports**
  Three
- **Data Rate**
  Up to 2 Mbps aggregated on 3 ports
- **Throughput**
  Up to 300 packets per second
- **Interface**
  – port 1: V.35, X.21 (DTE)
  – port 2: V.24, V.35, X.21 (DTE or DCE)
  – port 3: V.24 (DTE or DCE)
- **Connectors**
  – port 1: V.35, 34-pin D-type, male (via adapter cable)
  X.21, 15-pin D-type, female (via adapter cable)
  – port 2: V.35, 34-pin D-type, male (via channel doubler cable)
  X.21, 15-pin D-type, female (via channel doubler cable)
  V.24, 25-pin D-type, female (via channel doubler cable)
  – port 3: V.24, 25-pin D-type, female (via channel doubler cable)
- **Protocols**
  X.25, Frame Relay, HDLC, asynchronous, soft-selectable for each port
  X.25: complies with 1988 ITU X.25 LAP-B
  Frame Relay: supports CLLM, LMI, and ANSI PVC management protocols; complies with ANSI T1.606, T1.617 Annex D, T1.618, ITU-T, Rec. Q.922 Annex A and Rec. Q.933 Annex A

CONTROL PORT

- **Port**
  Port 3 is switched to async operation during configuration
- **Data Rate**
  75 bps to 38.4 kbps
- **Flow Control**
  XON/XOFF
  CTS/RTS
- **Command Modes**
  X.28, X.29

GENERAL

- **Indicators**

PWR (green)	ON when unit is powered
ERR (red)	ON when failure in operation is detected
SYNC (green)	ON when synchronization in the protocol layer is achieved
DATA (yellow)	ON when data is transmitted on the line

- **Control**
  Reset
- **Physical**
  Height: 11 cm / 4.3 in
  Width: 5.3 cm / 2.1 in
  Depth: 2.2 cm / 0.9 in
  Weight: 90 g / 3.3 oz
- **Environment**
  Temperature: 0-50°C (32-122°F)
  Humidity: up to 90%, non-condensing
- **Power**
  Powered by an external power supply: 5 VDC, 700 mA, regulated (+10%, -2% VDC)

ORDERING

SPS-3HS/*/&
Miniature Multiprotocol FRAD/PAD

* Specify external power supply
230 for stand-alone, regulated 230 VAC to 5 VDC, 700 mA
115 for stand-alone, regulated 115 VAC to 5 VDC, 700 mA
(default is without power supply)

& Specify port 1 (network) and port 2 (user) interfaces:
V35/V35 for V.35 on both ports
V35/V24 for network interface V.35, and user interface V.24
V24/V24 for V.24 on both ports
X21/X21 for X.21 on both ports

External power supplies can be ordered separately:

PS-230/5/700
for stand-alone regulated 230 VAC to 5 VDC / 700 mA power supply

PS-115/5/700
for stand-alone regulated 115 VAC to 5 VDC / 700 mA power supply

RAD
data communications

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