

# SPS-2HS



## Miniature Multiprotocol FRAD/PAD



### FEATURES

- 2-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-2HS is a 2-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 serving as a rate converter (see *Figure 2*).

#### FRAME RELAY

- SPS-2HS 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 signaling 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-2HS supports CLLM management protocol and complies with ITU REC Q.933, Annex A.

#### 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-2HS 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-2HS supports X.25 multicasting.

#### X.32

- SPS-2HS 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.

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### 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.

### 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-2HS, using the SLIP protocol.

### NETWORK MANAGEMENT

- SPS-2HS 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-2HS 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.

## APPLICATIONS

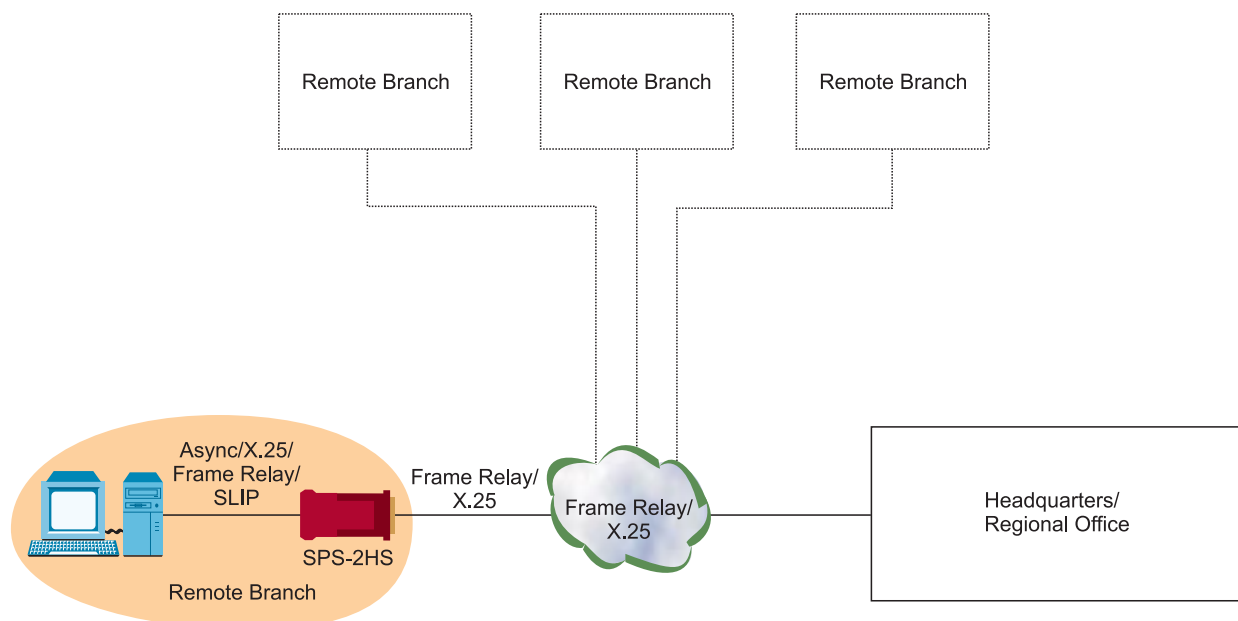


Figure 1. Access for a Small Office (Protocol Conversion)

## Miniature Multiprotocol FRAD/PAD

### SPECIFICATIONS

#### COMMUNICATIONS

- **Number of Ports**  
Two
- **Data Rate**  
Up to 2 Mbps aggregated on 2 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 (via channel doubler cable)
- **Connectors**
  - port 1: V.35, 34-pin D-type, male  
X.21, 15-pin D-type, female
  - port 2: V.35, 34-pin D-type, male  
X.21, 15-pin D-type, female  
V.24, 25-pin D-type, female
  - port 3: V.24, 25-pin D-type, female (via channel doubler cable)

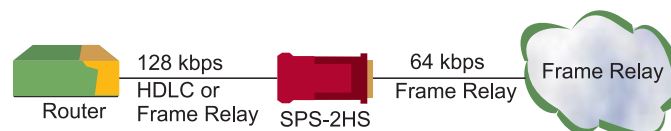
- **Protocols**  
X.25, Frame Relay, HDLC, asynchronous, soft-selectable for each port  
X.25: complies with 1988 ITU X.25 LAP-B  
Frame Relay: supports CLLM, LMI, and ANSI PVC management protocols; complies with ANSI T1.606, T1.617 Annex D, T1.618, ITU-T, Rec. Q.922 Annex A, and Rec. Q.933 Annex A

#### ASYNCHRONOUS CHANNEL

- **Interface**  
V.24/RS-232
- **Connector**  
25-pin male, via a channel doubler cable connected to port 2
- **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: 11.0 cm / 4.3 in
  - Width: 5.3 cm / 2.1 in
  - Depth: 2.2 cm / 0.9 in
  - Weight: 90.0 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)



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

# SPS-2HS

## Miniature Multiprotocol FRAD/PAD

### ORDERING

#### SPS-2HS/\*/&

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



data communications

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