



Miniature Packet Switching Access Unit



- 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-3 supports the CLLM management protocol and complies with ITU REC Q.933 Annex A.

FEATURES

- 3-port FRAD/PAD (Packet/Frame Relay Assembler/Disassembler) and multiprotocol packet switch
- Protocols supported: Frame Relay, X.25, X.32, HDLC, SLIP and Asynchronous
- IP support includes:
 - IP routing
 - Standard IP encapsulation over Frame Relay (RFC 1490), or X.25 (RFC 1356) networks
- Multiprotocol links with data rate of up to 2 Mbps
- Manageable via RADview-PC or RADview-HPOV, RAD's SNMP-based network management systems

DESCRIPTION

- SPS-3 is a 3-port FRAD/PAD and multiprotocol packet switch intended for small/remote branch offices.
- Typical applications include: access for the remote office in a multi-protocol environment/ protocol converter, and serving as a rate converter.

BACKUP CHANNEL

- SPS-3 includes a third port for establishing a backup channel over a PSTN network, or for connecting to another SPS-3 unit.

FRAME RELAY

- SPS-3 provides access to public or private Frame Relay networks.
- As an access device to a Frame Relay network, the unit supports Asynchronous, HDLC, IP, X.25 and Frame Relay traffic.

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-3 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.
- X.25 multicasting is also supported.

X.32

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

SPS-3

Miniature Packet Switching Access Unit

TRANSPARENT HDLC ACCESS

- For connecting bridges, routers and other HDLC communication devices over X.25 or Frame Relay networks, multiprotocol links are programmed to operate in transparent HDLC. The HDLC traffic is encapsulated over X.25 or Frame Relay, providing end-to-end transparent operation.

IP CONNECTIVITY

- IP packets are routed to their destination via SLIP, X.25 or Frame Relay link, according to a static IP address.
- The IP protocol is 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-3, using the SLIP protocol.

NETWORK MANAGEMENT

- SPS-3 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 a RADview-HPOV SNMP management station.
- The 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

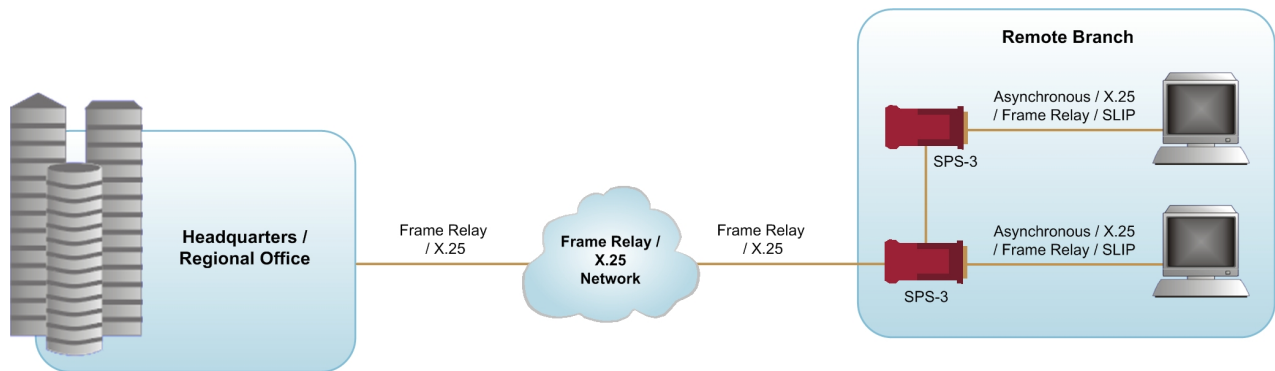


Figure 1. Access for a Small Office (Protocol Conversion)

Miniature Packet Switching Access Unit

SPECIFICATIONS

PHYSICAL PORTS

- **Number of Ports**
3 (1 network port, 1 user port, 1 backup port)
- **Data Rate**
Up to 2 Mbps aggregated on the two ports
- **Throughput**
Up to 300 packets per second
- **Interface Types**
 - V.35, X.21 (DTE)
 - V.24, V.35, X.21 (DTE or DCE)
- **Connectors**
 - V.35: 34-pin D-type, male
 - X.21: 15-pin D-type, female
 - V.24: 25-pin D-type, female, via a splitter cable

PROTOCOLS AND STANDARDS

- **Supported Protocols**
X.25, X.32, Frame Relay, HDLC, SLIP, Asynchronous (user-selectable)
- **Standards**
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, Rec. Q.933 Annex A

ASYNCHRONOUS CHANNEL

- **Interface Type**
V.24/RS-232
- **Connector**
25-pin male, via a splitter 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
- **Backup Channel**
For PSTN packet streams

GENERAL

- **Indicators**
POWER (green)
On: SPS-3 is powered up
SYNC (green)
On: Protocol layer is synchronized
DATA (yellow)
On: Data is being transmitted on the line
ERROR (red)
On: Operation failure has been detected
- **Control**
Reset button
- **Physical**
Height: 22.0 mm (0.9 in)
Width: 53.0 mm (2.1 in)
Length: 110.0 mm (4.3 in)
Weight: 0.9 kg (1.9 lb)
- **Environment**
Temperature: 0–50°C (32–122°F)
Humidity: up to 90%, non-condensing
- **Power**
External power supply, 5 VDC, 1200 mA, regulated (+10%, -2%)

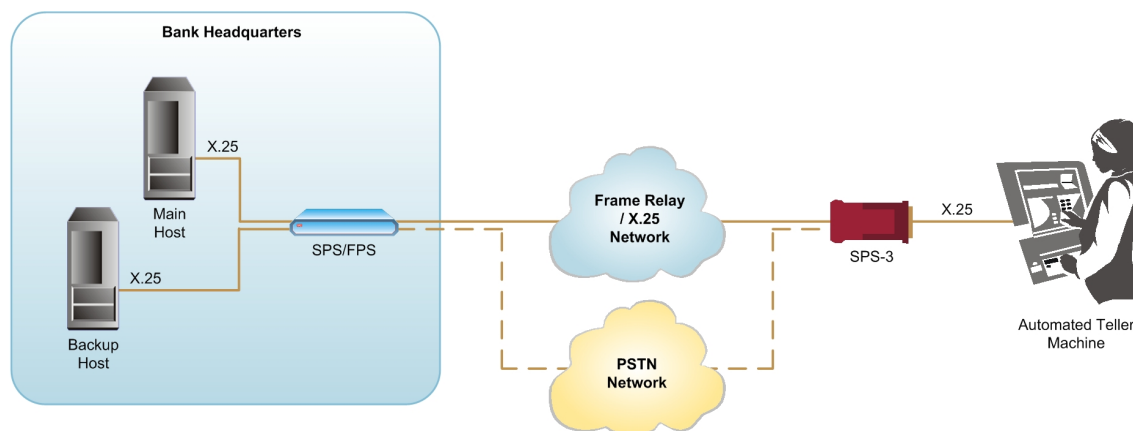


Figure 2. X.25 Service with a PSTN Backup Channel

SPS-3

Miniature Packet Switching Access Unit

ORDERING

SPS-3/&

Miniature Packet Switching Access Unit

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

SUPPLIED ACCESSORIES

CBL-8H/F

Adapter cable for V.24 and V.35 interface types (if V.24 or V.35 interface is ordered)

CBL-530T/21C/F

Adapter cable for X.21 interface (if X.21 interface is ordered)

CBL-SPS-V.24

Splitter cable for ports with V.24 interface (if V.24 interface is ordered)

CBL-SPS-V.35

Splitter cable for ports with V.35 interface (if V.35 interface is ordered)

CBL-SPS-X.21

Splitter cable for ports with X.21 interface (if X.21 interface is ordered)

OPTIONAL ACCESSORIES

P/S-AC/5/1200

Standalone regulated 115–230 VAC to 5 VDC / 1200 mA power supply



data communications

www.rad.com

- **International Headquarters**
24 Raoul Wallenberg Street
Tel Aviv 69719, Israel
Tel: 972-3-6458181
Fax: 972-3-6498250
Email: market@rad.com
- **North America Headquarters**
900 Corporate Drive
Mahwah, NJ 07430, USA
Tel: (201) 529-1100
Toll free: 1-800 444-7234
Fax: (201) 529-5777
Email: market@radusa.com

155-100-10/06