

# APD-2HS



## Miniature 2-Channel Multiprotocol FRAD/PAD



### FEATURES

- 2-channel asynchronous Packet/Frame Relay Assembler/Disassembler (PAD/FRAD)
- One synchronous Frame Relay or X.25 link
- X.32 interface for modem dial-up
- Synchronous link data rate of up to 256 kbps
- Asynchronous channels data rate of up to 115.2 kbps
- V.24 (RS-232) and V.35 synchronous link interfaces
- Managed via an ASCII terminal or RADview-PC, RAD's SNMP-based network management system

### DESCRIPTION

- APD-2HS is a miniature FRAD/PAD, which connects two asynchronous channels to a Frame Relay or X.25 network.

#### ASYNCHRONOUS CHANNELS

- Asynchronous traffic is packetized directly over the Frame Relay network, or packetized over the X.25 protocol and then encapsulated over a Frame Relay network.
- Asynchronous channel operation complies with X.3, X.28, and X.29 requirements.
- The asynchronous channels operate at data rates from 75 bps up to 115.2 kbps.
- Hardware flow control is fully supported.

#### FRAME RELAY

- Access to public or private Frame Relay networks is provided either by:
  - Sending Asynchronous traffic directly over the Frame Relay network (see *Figure 1*)
  - Using Asynchronous to X.25 conversion (see *Figure 2*) over Frame Relay (reliable X.25 over Frame Relay encapsulation, as per Annex G).
- A unique funneling method controls network congestion and moderates feeder throughput speed.
- LMI and ANSI PVC management protocols are supported, and operation is in compliance with ANSI T1.606, T1.618, T1.617 Annex D and ITU Rec. Q.922, 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.
- APD-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.

#### X.32

- APD-2HS supports the X.32 protocol, to access the X.25 network remotely via a dial-up modem. The X.32 protocol supports V.25 bit commands.

# APD-2HS

## Miniature 2-Channel Multiprotocol FRAD/PAD

### MANAGEMENT CAPABILITIES

- APD-2HS can be managed locally via an ASCII terminal connected to one of its asynchronous ports.
- APD-2HS contains an SNMP agent that allows access to the unit from any point over the X.25/Frame Relay network via IP-based connection, using RADview-PC, RAD's SNMP-based network management system.
- 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.
- The management agent enables configuration, statistics collection, status reports and diagnostics. The management agent can be programmed to periodically send statistics and status reports to up to five network locations. An alarm event can also be transmitted (user-configurable).

## APPLICATIONS

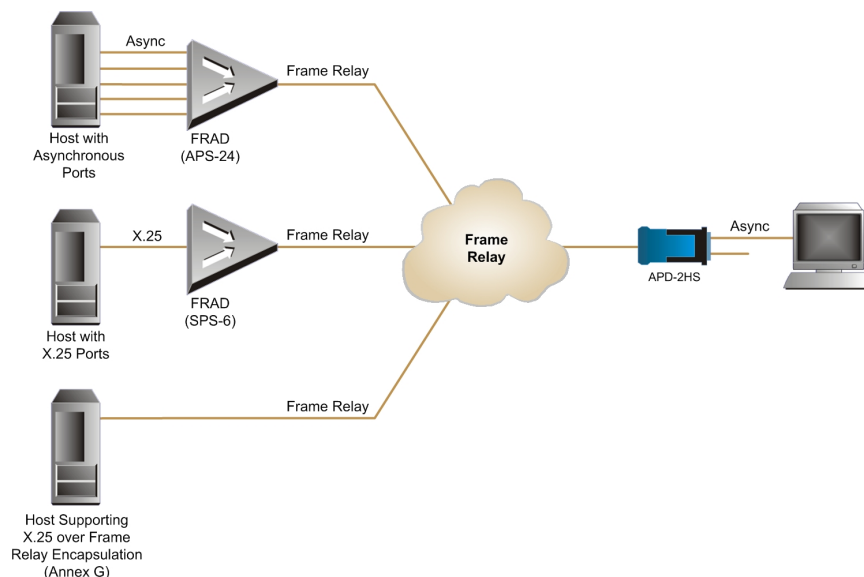


Figure 1. Asynchronous Traffic over Frame Relay

## Miniature 2-Channel Multiprotocol FRAD/PAD

### SPECIFICATIONS

#### SYNCHRONOUS LINK

- **Interface**  
V.24 (RS-232) or V.35 (DTE)
- **Data Rate**  
V.24: up to 128 kbps  
V.35: up to 256 kbps
- **Connector**  
V.24: 25-pin D-type, male  
V.35: 34-pin, D-type, female, via an adapter cable (supplied)
- **Clock**  
External
- **Protocols**
  - X.3, X.25, X.28, X.29, X.32:  
All comply with 1988 ITU-T
  - Frame Relay:  
LMI and ANSI PVC management protocols. Complies with ANSI T1.606, T1.617 Annex D, T1.618 and ITU Rec. Q.922 Annex A

#### ASYNCHRONOUS LINKS

- **Number of Links**  
2
- **Interface**  
V.24 (RS-232)
- **Data Rate**  
75 bps to 115.2 kbps
- **Flow Control**  
XON/XOFF, CTS/RTS
- **Protocols**  
X.28, X.29
- **Connector**  
RJ-45

#### GENERAL

- **Indicators**
  - POWER (green)  
On: APD-2HS is powered up
  - SYNC CH1 (green)  
On: Channel 1 is synchronized
  - DATA CH1 (yellow)  
On: Data is being transmitted on channel 1
  - DATA CH2 (yellow)  
On: Data is being transmitted on channel 2
  - DATA CH3 (yellow)  
On: Data is being transmitted on channel 3
  - ERROR (red)  
On: Operation failure has been detected
- **Controls**  
Reset button
- **Power**  
External power supply, 5 VDC, 1200 mA, regulated (+10%, -2%)
- **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

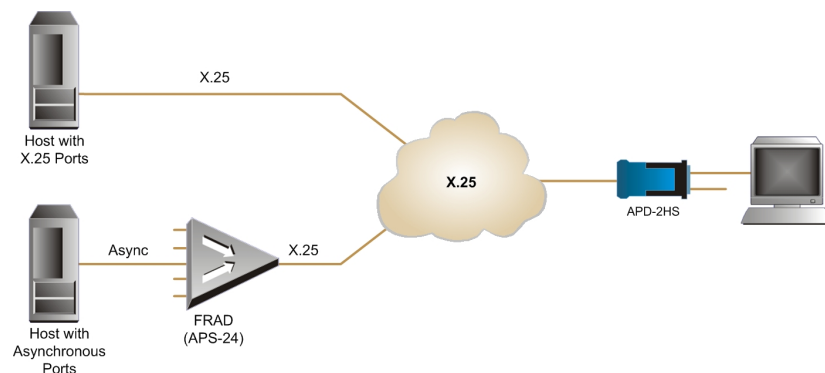


Figure 2. Asynchronous to X.25 Conversion

# APD-2HS

## Miniature 2-Channel Multiprotocol FRAD/PAD

### ORDERING

#### APD-2HS

Miniature 2-channel multiprotocol  
FRAD/PAD

*Note: External power supply can be ordered  
separately (see P/S-AC/5/1200 in Optional  
Accessories below).*

#### SUPPLIED ACCESSORIES

##### **CBL-8H/F**

Adapter cable for V.35 interface

##### **CBL-RJ45/D9/F/STR**

Adapter cable for connecting an  
ASCII terminal to an asynchronous  
port

#### OPTIONAL ACCESSORIES

##### **P/S-AC/5/1200**

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



**data communications**

[www.rad.com](http://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](mailto: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](mailto:market@radusa.com)

150-100-10/06