

# ASMi-31

## Sync/Async 2-Wire Manageable IDSL Modem



2-wire full-duplex  
IDSL modem with  
remote management  
extends data  
transmission to  
7.0 km (4.3 miles)

- 2-wire IDSL modem with remote management
- Data range of up to 7.0 km (4.3 miles)
- Multiple data rates between 1.2 and 128 kbps
- 2B1Q line coding for extended range and improved quality
- Full-duplex inband management of the remote unit over the D-channel

ASMi-31 is a 2-wire full-duplex IDSL modem with remote management that extends data transmission to 7.0 km (4.3 miles) irrespective of data rate.

ASMi-31 operates synchronously or asynchronously at user-selectable data rates from 1.2 to 128 kbps.

The modem uses 2B1Q line code and adaptive equalizers to provide immunity from background noise, eliminate normal line distortion, and enable efficient transmission over 2-wire twisted pair cables.

ASMi-31 is available as a "master" or "slave" standalone unit. The master modem includes a front panel LCD and control buttons. The slave modem has a blank front panel with a special 20-pin connector for a portable control unit (PCU) connection.



## ASMi-31

### Sync/Async 2-Wire Manageable IDSL Modem

The master modem provides full-duplex inband management of the remote unit. Management data is transmitted over the D-channel to ensure simultaneous configuration of the local and remote units, activation of real-time alerts on system faults, and initiation of diagnostic tests.

ASMi-31 supports a wide range of digital interfaces: V.24/RS-232, V.35, X.21, RS-530, V.36/RS-449 and G.703 Codirectional (64 kbps). In addition, the modem supports a built-in Ethernet bridge (IR-ETH) and IP router (IR-IP) to allow LAN-to-LAN connectivity using IDSL technology.

ASMi-31 can be managed via the front panel buttons and LCD (in the master unit).

The ASMi-31 clock source depends on the modem's functional mode (master or slave):

- Master clock: INT derived from internal oscillator or EXT derived from the DTE interface
- Slave clock: RCV (recovered from line signal).

The user-selectable carrier may be continuous or controlled by RTS for passing control signals end-to-end.

ASMi-31 has wide diagnostic capabilities that include the following test options:

- V.54 local analog and remote digital loopbacks
- BER testing per V.52.

Line interface circuitry protects against lightning and power surges.

## Specifications

### LINE INTERFACE

#### Line Type

Unconditioned telephone line (twisted pair), 19 AWG to 26 AWG

#### Line Coding

2B1Q

#### Range

Up to 7.0 km (4.3 miles) over 24 AWG line, irrespective of data rate

#### Level

Up to 14 dBm

#### Impedance

135W, high

#### Return Loss

Greater than 15 dB

#### Compliance

ANSI T1.601, 1988

#### Carrier

Constantly ON or controlled by RTS

#### Connector

3-clip terminal block or RJ-45

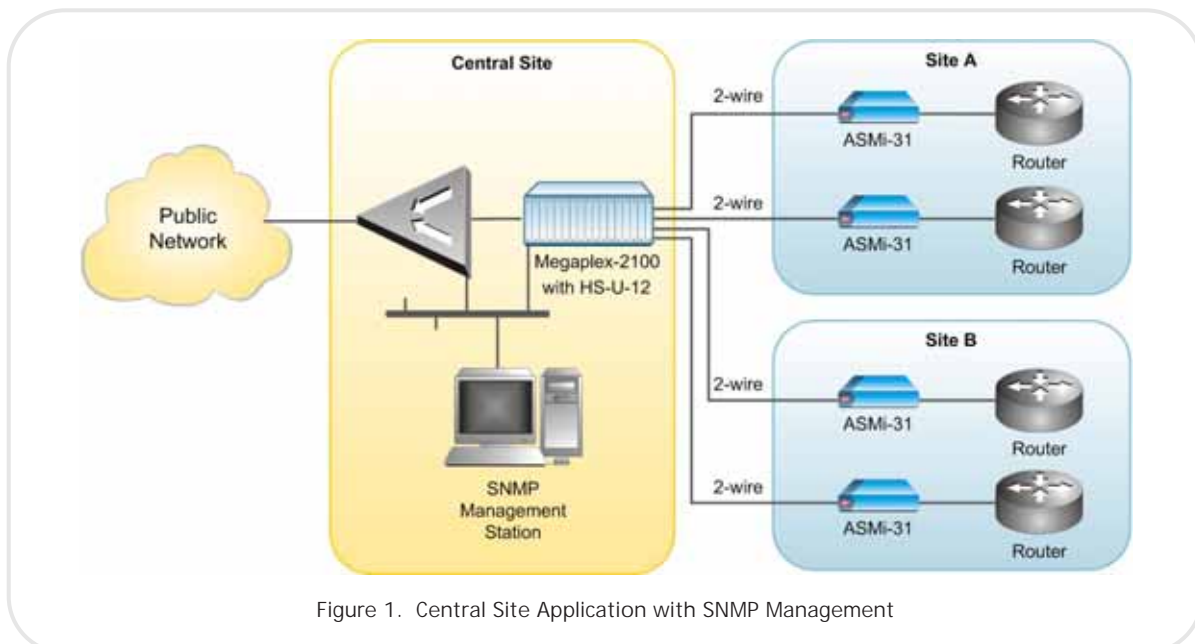


Figure 1. Central Site Application with SNMP Management

**DTE INTERFACE**

**Connectors**

- V.24/RS-232: 25-pin D-type, female
- RS-530: 25-pin D-type, female
- V.35: 34-pin, female
- X.21: 15-pin, D-type, female
- V.36/RS-449: via adapter cable converting between the RS-530 connector and a 37-pin, D-type, female connector
- IR-ETH (Ethernet bridge): RJ-45 or BNC coax
- IR-IP (IP router): RJ-45
- G.703 Codirectional: RJ-45 or terminal block

*Note: For G.703 codirectional interfaces, there is no end-to-end byte synchronization.*

**Data Rate**

- Synchronous: 1.2, 2.4, 4.8, 9.6, 16, 19.2, 32, 38.4, 48, 64, or 128 kbps
- Asynchronous: 1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 57.6, or 115.2 kbps

**Control Signals**

- DCD
  - On: the two modems are synchronized
  - Local unit DCD follows remote unit RTS
- DSR
  - Always On
  - Remote unit DSR follows local unit DTR

**GENERAL**

**Timing**

- Master clock
- Internal: supplied by the internal oscillator
- External: received from the DTE
- Slave clock
- Receive: recovered from the line signal

**Diagnostics**

- V.54 local analog and remote digital loopbacks
- V.52 BER testing

*Note: The loopbacks are initiated by the management software or via the DTE interface pins. Activation via the DTE interface pins is not available for X.21, G.703 or Ethernet interfaces.*



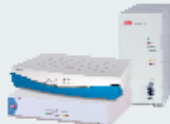


**Indicators**

- RTS (yellow)
  - On: DTE activates request to send
- DCD (yellow)
  - On: a valid receive signal is present
- TD (yellow)
  - On: a steady space is transmitted
  - Flashing: data is transmitted
- RD (yellow)
  - On: a steady space is received
  - Flashing: data is received
- ALM (red)
  - On: a new alarm is detected in the alarm buffer
- TST (red)
  - On during loopback or BER testing
- SYNC (green/red)
  - Red: the local modem's data link is not synchronized with the remote modem
  - Green: the local modem's data link is synchronized with the remote modem

**Buttons**

- CURSOR – Moves among the information fields on the LCD
- ENTER – Confirms the changes made during ASMI-31 operation
- SCROLL – Scrolls among the field options displayed on the LCD

Table 2. Sync Modem Comparison Chart

Feature	ASM-10/8	ASM-31/ASMI-31	ASMI-52	ASMI-52L	ASM-61
					
Max. data rate	19.2 kbps	128 kbps	2.3/4.6 Mbps	2.3/4.6 Mbps	10 Mbps
Interface	V.24	V.24, V.35, V.36, X.21, RS-530, Ethernet, UTP, UTP/Q, IP, G.703 Codirectional	V.35, RS-530, X.21, E1/T1, Ethernet	V.35, X.21, E1, ETH, 4 x ETH	Ethernet
Line	2W/4W	2W	2W/4W	2W/4W	2W
Approx range (km @ 24 AWG)	13.0	8.0	4	4	1.2
Rack option	✓	✓	✓		
Multipoint configuration	✓				

**ASMi-31****Sync/Async 2-Wire Manageable IDSL Modem****Physical**

Height: 4.4 cm (1.7 in)  
 Width: 1.5 cm (8.5 in)  
 Depth: 4.3 cm (9.6 in)  
 Weight: 1.5 kg (3.2 lb)

**Power Supply**

Wide range:  
 100 to 240 VAC,  
 -40 to -72 VDC

24 VDC

**Power Consumption**

5W max.

**Line Protection**

AC/DC overvoltage protection circuits are connected via transformers to the transmit and receive lines

**Environment**

Temperature: 0° to 50°C (32° to 122°F)  
 Humidity: Up to 90%, non-condensing

**Ordering****STANDARD CONFIGURATION**

**ASMI31-2/M/115/V24**  
**ASMI31-2/S/115/V24**  
**ASMI31-2/S/115/V35**  
**ASMI31-2/M/230/V35**  
**ASMI31-2/M/230/V24**

**SPECIAL CONFIGURATION**

**ASMI-31-2/M/\*/#**  
 Sync/async 2-wire manageable IDSL modem, master unit

**ASMI-31-2/S/\*/#**  
 Sync/async 2-wire manageable IDSL modem, slave unit

*Legend*

\* Power supply type:  
**115** 115 VAC  
**230** 230 VAC  
**48** -48 VDC  
*Note: Any of the above options indicate the wide-range power supply.*  
**24** 24 VDC

# DTE interface:  
**V24** V.24/RS-232 interface  
**V35** V.35 interface  
**V36** V.36/RS-449 interface  
**530** RS-530 interface  
**X21** X.21 interface  
**G703TB** G.703 Codirectional (64 kbps) interface with terminal block connector  
**G703RJ** G.703 Codirectional (64 kbps) interface with RJ-45 connector  
**UTP** IR-ETH module with RJ-45 connector  
**IP** IR-IP module

**SUPPLIED ACCESSORIES**

DC adapter (when ordered with DC power supply)

**OPTIONAL ACCESSORIES****PCU**

Portable control unit with protective casing for the slave ASMi-31 unit

**RM-28**

Hardware kit for mounting one or two units in a 19-inch rack

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