

# 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 mi)
- 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.



**data communications**

Innovative Access Solutions

# 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.

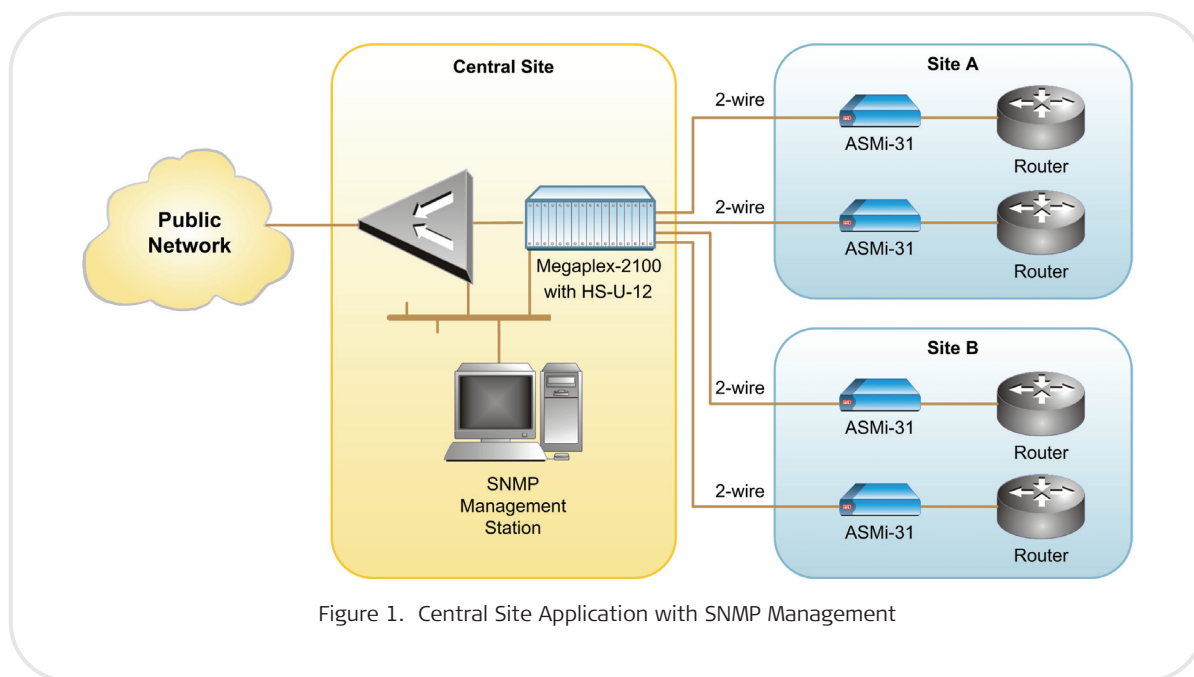


Figure 1. Central Site Application with SNMP Management

## 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

### 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

Table 2. Sync Modem Comparison Chart

| Feature                    | SRM-5SC<br>SRM-6SC | ASM-10/8 | ASM-20                                                                        | ASM-31<br>ASMi-31 | ASM-40 | ASMi-52                             | ASM-60                 | ASM-61   |
|----------------------------|--------------------|----------|-------------------------------------------------------------------------------|-------------------|--------|-------------------------------------|------------------------|----------|
| Max. data rate (kbps)      | 19.2               | 19.2     | 256                                                                           | 128               | 2048   | 2.3/4.6 Mbps                        | 10 Mbps                | 10 Mbps  |
| Interface                  | V.24               | 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 | Router, Ethernet, HSSI | Ethernet |
| 2W/4W                      | 4                  | 2/4      | 4                                                                             | 2                 | 4      | 2/4                                 | 4                      | 2        |
| Approx range (km @ 24 AWG) | 5.0                | 13.0     | 7.5                                                                           | 8.0               | 1.8    | 4                                   | 2.0                    | 1.2      |
| Rack option                |                    | ✓        | ✓                                                                             | ✓                 | ✓      | ✓                                   |                        |          |
| Multipoint configuration   | ✓                  | ✓        | ✓                                                                             |                   |        |                                     |                        |          |

# ASMi-31

## Sync/Async 2-Wire Manageable IDSL 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

### 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°–50°C (32°–122°F)

Humidity: Up to 90%, non-condensing

## Ordering

### 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

**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

AC power cord (when AC power supply is ordered)

DC adapter (when DC power supply is ordered)

### 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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