

ASM-31

2-Wire Multi-Rate Short-Range Modem



Multi-rate, short-range, synchronous and asynchronous modem operating in full-duplex over 2-wire lines

- Selectable data rates: 1.2 kbps to 128 kbps for sync and up to 38.4 kbps for async
- Operating range of up to 5.5 km (3.4 miles) at all specified data rates
- 2B1Q line coding
- Adaptive equalizer for noise immunity and high performance over low-quality lines
- Variety of DTE interfaces: RS-530, V.24, V.35, V.36, X.21, G.703 Codirectional

ASM-31 is a multirate sync/async short-range modem that operates in full-duplex mode over 2-wire twisted pair lines, at selectable data rates from 1.2 kbps to 128 kbps.

ASM-31 uses 2B1Q line coding and transmits data in full-duplex up to 5.5 km (3.4 miles), independently of the data rate. An adaptive equalizer provides noise immunity and high performance over low quality lines.

The DTE interface options include V.24/RS-232, V.35, RS-530, X.21, and G.703 Codirectional (64 kbps). The line connection is provided via an RJ-45 or a 3-screw terminal block connector. The unit is configured using internal jumpers and switches.



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Diagnostics include local analog, local digital and remote digital loopbacks.

Front panel LEDs indicate data receive and transmit, control signal status, loopback test state, and synchronization loss.

Line interface circuitry protects against lightning and power surges.

Specifications

LINE INTERFACE

Line Type

2-wire unconditioned twisted pair

Line Coding

2B1Q

Range

Up to 5.5 km (3.4 miles) over 26 AWG line, irrespective of data rate

Level

Up to 14 dBm over 135 Ω

Compliance

ANSI T1.601, 1988

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

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, 19.2, 38.4, 64, or 128 kbps

Asynchronous: 1.2, 2.4, 4.8, 9.6, 19.2, or 38.4 kbps

Control Signals

User-selectable:

DCD turns on when synchronized or follows the remote RTS

DSR turns on when powered on or follows the remote DTR

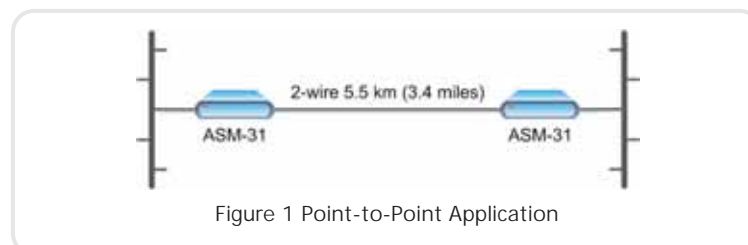


Figure 1 Point-to-Point Application

GENERAL

Timing

Master clock:

- Internal, supplied by the internal oscillator
- External, received from the DTE

Slave clock: LBT, recovered from the line signal

Diagnostics

Local digital loopback (DIG), activated by the front panel pushbutton

Remote digital loopback (REM), activated by the front panel pushbutton or via the DTE interface pins

Local Analog loopback (ANA), activated by the front panel pushbutton or via the DTE interface pins

Note: Activation of the local analog and remote digital loopbacks via the DTE interface pins is available only for the V.24/RS-232, V.35 and RS-530 interfaces.

Indicators

PWR (green) – On when power is on

RTS (yellow) – On when DTE activates

Request To Send

TD (yellow) –

On when steady SPACE is transmitted

Blinking when data is transmitted

RD (yellow) –

On when steady SPACE is received

Blinking when data is received

Not active when the RLB is active

DCD (yellow) – On when a valid received

line signal is present

ERR (yellow) –

On or blinking if errors are present in

the test pattern

Lights momentarily when PATT

pushbutton is pressed

LOS (red) – On when Signal Loss is detected

TST (red) – On when ASM-31 is in any

loopback mode, or when PATT is pressed

Power

AC: 115 VAC or 230 VAC ($\pm 10\%$),
47 to 63 Hz, 5W

DC: 24 VDC or -48 VDC

Line Protection

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

Physical

Height: 4.4 cm (1.7 in)

Width: 21.5 cm (8.5 in)

Depth: 24.3 cm (9.6 in)



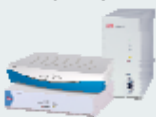



Weight: 1.15 kg (2.55 lb)

Environment

Temperature: 0° to 50°C (32° to 122°F)

Humidity: Up to 90%, non-condensing

Table 1. Sync Modem Comparison Chart

Feature	ASM-10/8	ASM-31, ASMi-31	ASMi-52	ASMi-52L	ASMi-54	ASMi-54L
						
Max. data rate	19.2 kbps	128 kbps	2.3/4.6 Mbps	2.3/4.6 Mbps	5.7/11/22 Mbps	5.7/11.4 Mbps (11.4/15 per pair with license key)
Interface	V.24	V.24, V.35, V.36, X.21, RS-530, G.703 Codirectional	V.35, RS-530, X.21, E1/T1, ETH	V.35, X.21, E1, ETH, 4 x ETH	4 x ETH, E1/4 x E1	4 x ETH, E1
Line	2W/4W	2W	2W/4W	2W/4W	2W/4W/8W	2W/4W
Rack option	✓				✓	

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Ordering

ASM-31/~/+

Legend

~ Power supply:

115	115 VAC
230	230 VAC
48	-48 VDC
24	24 VDC

+ DTE interface:

V24	V.24/RS-232
V35	V.35
V36	V.36/RS-449
530	RS-530
X21	X.21
703/TB	G.703 Codirectional (64 kbps) interface with terminal block connector
703/RJ	G.703 Codirectional (64 kbps) interface with RJ-45 connector

SUPPLIED ACCESSORIES

AC power cord (when AC power supply is ordered)

DC adapter (when DC power supply is ordered)

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