

ASM-31

2-Wire Multirate Short Range Modem

Multirate, 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, Ethernet bridge and Ethernet router

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 ASM-31 DTE interface options include V.24/RS-232, V.35, RS-530, X.21, G.703 Codirectional (64 kbps), Ethernet bridge, and Ethernet router. 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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ASM-31 can be ordered as a standalone unit or as a single modem card for the 19-inch ASM-MN-214 rack.

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 135Ω

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

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, 19.2, 38.4, 64, or 128 kbps

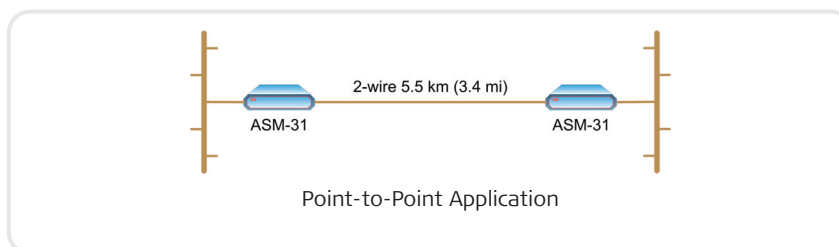
Asynchronous: 1.2, 2.4, 4.8, 9.6, 19.2, or 38.4 kbps

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



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) – Power
- RTS (yellow) – Request to Send
- TD (yellow) – Transmit Data
- RD (yellow) – Receive Data
- DCD (yellow) – Data Carrier Detect
- ERR (red) – Bit Error
- LOS (red) – Signal Loss
- TEST (yellow) – Test

Power (Standalone)

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

Table 2. Sync Modem Comparison Chart

Feature	SRM-55C SRM-65C	ASM-10/8	ASM-20	ASM-31 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	✓	✓	✓					

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Ordering

ASM-31/~/+

2-wire multirate short range modem

ASM-31R/+

Card version for ASM-MN-214 rack

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**UTP** IR-ETH module with RJ-45 connector**IP** IR-IP module**Note:** *ASMi-31/R cards use the DB-25 DTE connector of the ASM-MN-214 modem rack.***SUPPLIED ACCESSORIES**

AC power cord (when AC power supply is ordered)

DC adapter (when DC power supply is ordered)

OPTIONAL ACCESSORIES**RM-17**

Special hardware for mounting one or two ASM-31 units in a 19-inch rack

CIA/ε

Connector interface adapter for ASM-MN-214 rack

Legend

ε Adapter for ASM-31 card version:

V35/1 For adapting one 25-pin rack DTE connector to one V.35 34-pin connector**X21** For adapting two adjacent 25-pin rack DTE connectors to two X.21 15-pin connectors**International Headquarters**24 Raoul Wallenberg Street
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