

## 1. GENERAL

The SNM31 modem is an auto-mode, multispeed, error control, auto-dial, asynchronous-synchronous, half-duplex, full-duplex, switched and 2 or 4 wire leased line modem which has the following major features:

### 1.1. FUNCTIONAL CHARACTERISTICS

#### **Auto-mode**

Automatic adaptation to remote modem line rate and error control protocol.

#### **Multistandard**

SNM31 supports the communication standards listed in the following table for leased and switched line.

Mode	Standard	Speed	Trasmission	Description
F	V33	14400 bit/s	PP	sync/async, 4 wire leased line
F	V33	12000 bit/s	PP	synchronous, 4 wire leased line
<b>F</b>	<b>V33P</b>	<b>9600 bit/s</b>	<b>PP</b>	<b><u>sync/async (proprietary), 4 wire leased line</u></b>
<b>F</b>	<b>V33P</b>	<b>7200 bit/s</b>	<b>PP</b>	<b><u>sync/async (proprietary), 4 wire leased line</u></b>
<b>F</b>	<b>V33P</b>	<b>4800 bit/s</b>	<b>PP</b>	<b><u>sync/async (proprietary), 4 wire leased line</u></b>
M	V32bis	14400 bit/s	PP	sync/async switched and leased 2/4 wire line
M	V32bis	12000 bit/s	PP	synchronous switched and leased 2/4 wire line
M	V32	9600 bit/s	PP	sync/async switched and leased 2/4 wire line
M	V32bis	7200 bit/s	PP	sync/async switched and leased 2/4 wire line
M	V32	4800 bit/s	PP	sync/async switched and leased 2/4 wire line
F	V29	9600 bit/s	PP/MP	sync/async, <b><u>switched and leased</u></b> 2/4 wire line
F	V29	7200 bit/s	PP/MP	sync/async, <b><u>switched and leased</u></b> 2/4 wire line
F	V29	4800 bit/s	PP/MP	sync/async, <b><u>switched and leased</u></b> 2/4 wire line
F	V27ter	4800 bit/s	PP	sync/async switched line
F	V27ter	2400 bit/s	PP	sync/async switched line
F	V27bis	4800 bit/s	PP/MP	sync/async, <b><u>switched and leased</u></b> 2/4 wire line
F	V27bis	2400 bit/s	PP/MP	sync/async, <b><u>switched and leased</u></b> 2/4 wire line
F	V26bis	2400 bit/s	PP	sync/async switched line
F	V26bis	1200 bit/s	PP	sync/async switched line
F	V26	2400 bit/s	PP/MP	sync/async, <b><u>switched and leased</u></b> 2/4 wire line
F	V23	1200/75 bit/s	PP	asynchronous, switched and leased 2/4 wire line
F	V23	1200/1200 bit/s	PP/MP	asynchronous, switched and leased 2/4 wire line
M	V22bis	2400 bit/s	PP	sync/async switched and leased 2/4 wire line
M	V22	1200 bit/s	PP	sync/async switched and leased 2/4 wire line
M	V21	300 bit/s	PP	asynchronous, switched and leased 2/4 wire line

Tab.:1. Modulation Standard

**Note:****F:** Fixed standard**M:** Multistandard mode**PP:** Point to point**MP:** Multipoint

For teletex application please sure DTE setup: 1200 Full-duplex, 7 bit data, Parity even, 1 Stop bit. (See appendix L, Factory Configuration number 5).

**Communication Format**

The modem can be forced to work with a fixed modulation standard. It is possible, for example, to force the modem in V.23 standard (1200TX, 75RX).

**Error Control**

V.42 LAP-M, V.42bis and MNP class 5 data compression mode for increased throughput.

**Switched Line (SW)**

The modem is designed to work on switched line.

**Leased Line (LL)**

Two-wire or four-wire leased line connection can be used. Automatic dial back-up arrangement is available.

**Leased Line Monitoring**

When a dial back-up is active for the time selected by the S28 register, the modem automatically disconnects the switched line and goes on the leased line.

**Monitor C103 and C104**

The modem can verify MARK or SPACE conditions on the circuits C103 and C104 for the times selected respectively on the registers S36 and S37.

**Automatic/Manual Dialling**

Automatic dialling via asynchronous terminal using V.25 bis and AT command sets. Automatic dialling via synchronous terminal using V.25bis HDLC protocol.

Synchronous-asynchronous, C108/1 direct call.

**Delay C105/C106**

The 105/106 delay time in default depends on the modulation standard (see the table below). It is possible to change this time between 0 and 2550 ms (see S26 register for references).

Standard	Speed (bit/s)	Line type polling	105/106 short (ms)	105/106 long (ms)	105/106 (+ 215 ms) (ms)	Echo protector
V29	9600 bit/s	leased 2/4 wire H.D. and switched	/	/	253.5	NO
V29	7200 bit/s	leased 2/4 wire H.D. and switched	/	/	253.5	NO
V29	4800 bit/s	leased 2/4 wire H.D. and switched	/	/	253.5	NO
V29	9600 bit/s	leased 4 wire full duplex	/	20 ms <sup>(1)</sup>	2550 ms <sup>(1)</sup>	NO
V29	7200 bit/s	leased 4 wire full duplex	/	20 ms <sup>(1)</sup>	2550 ms <sup>(1)</sup>	NO
V29	4800 bit/s	leased 4 wire full duplex	/	20 ms <sup>(1)</sup>	2550 ms <sup>(1)</sup>	NO
V27ter	4800 bit/s	switched line	708 ms	50 ms	/	YES
V27ter	2400 bit/s	switched line	943 ms	67 ms	/	YES
V27bis	4800 bit/s	leased 2/4 wire H.D. and switched	/	50 ms <sup>(2)</sup>	708 ms <sup>(3)</sup>	NO
V27bis	2400 bit/s	leased 2/4 wire H.D. and switched		67 ms <sup>(2)</sup>	943 ms <sup>(3)</sup>	NO
V26bis	2400 bit/s	switched line	750-1400 ms	65-100 ms	200-275 ms	NO
V26bis	1200 bit/s	switched line	750-1400 ms	65-100 ms	200-275 ms	NO
V26	2400 bit/s	leased 2/4 wire H.D. and switched	/	24/45 ms	65/100 ms	NO

Tab.:2. C105/C106 Delay time

**Note:**

- <sup>(1)</sup> See S26 register
- <sup>(2)</sup> To use with M1020 line
- <sup>(3)</sup> To use in two wire line with characteristics worse than M1020.

**Autologon**

It is possible to link stored numbers to the different options which enable, for example, password exchange after the connection. Autologon works in synchronous-asynchronous mode with or without error correction.

**Call-back**

As in autologon it is possible, to link a procedure to a stored number. When a password (in answering mode) is acknowledged, SNM31 disconnects and calls the associated number immediately. If the password is not inserted it will call back the number stored in memory location 1.

**Extended Call-back**

You can activate the following procedure: modem A calls modem B; modem B asks modem A the telephone number to recall. Modem B disconnects and calls immediately.

**Remote Configuration**

This may be enabled either through asynchronous DTE (AT command) or front keyboard display. This is always available both in synchronous and asynchronous mode with or without error corrector.

**Command Port & Main Port**

The modem SNM31 is provided with two interfaces: Main Port and Command Port. For default the Main Port is used for configuration and data transmission; the Command Port is disabled. As alternative the Main Port can be used only for Data Transmission and the Command Port only for configuration.

**C.Aux**

(pin 12 connector command port/main port)

When C.Aux is ON indicates either a correct logon procedure or a correct call-back or a connection without logon and call-back.

**C.Conf**

(Alternative configuration)

C.Conf is an "entering" interface circuit (pin 19 connector Command Port/Main Port) which makes it possible to commutate the modem between 2 pre-stored configurations.

**Half-Duplex Simulation**

When in synchronous mode the modem can activate a half duplex simulation (as per CCITT V.13 recommendation).

**Attention**

*With H.D. transmission one can't create multi-point networks.*

**Test Facilities**

According to CCITT V.54 and V.22

- local analog testloop (CCITT loop 3) including a self-test facility
- digital testloop (CCITT loop 2)
- remote-controlled digital testloop (CCITT loop 2) including a selftest facility.
- test pattern: according to CCITT Rec.with as alternatives to '0/1
- bit error test: tests are set either through front panel switches, or through interface via signals C140/C141 or through a terminal via AT commands.

**Asynchronous Format**

You can select 8, 9, 10, 11 bits.

**User Configuration**

The user can store up to 10 configurations by AT commands or keyboard display. Every configuration can be linked to a stored number.

**Factory Presets**

The user can select from 10 different factory configuration profiles.

**SYNC XT and PS2 Cards**

You can use Digicom remote emulation cards: 3270 SNA, 3780 BSC, 5250-12 SNA whit Siiync-Dial software.

**Kit Contents**

The modem is supplied with the following equipment:

- a phone cable for switched line
- a phone cable for leased line
- this user's guide.