

## 4. AT COMMANDS

The AT command set has become a de facto industry standard for commanding low, medium and high speed asynchronous modems. The SNM31 modem's extended AT command set is fully compatible with the original AT command set, but in addition, it contains an error command control, speed conversion, security and storage for auto-dialling numbers.

There are two basic operations for the SNM31:

### **COMMAND mode:**

when the modem is not connected to another modem, therefore “off-line” or in an idle condition. In this mode the modem will accept commands beginning with the AT prefix.

### **DATA mode:**

when the modem is connected to another modem, that is in an “on-line” condition or functioning. In this mode all the characters sent from DTE are interpreted as data and they are sent to the remote mode. You may switch from data to command mode by entering an escape sequence. The default escape sequence is +++ (see Register S2) this must have at least one second before and after being keyed. To go back into data mode simply type ATO<CR>.

The AT commands are divided into three categories:

### **1. "AT" or "at" + <command body> + <CR>**

Most AT commands belong to this category. This command can be divided into four additional sub-categories:

#### **a. "AT" or "at" + <command body> + <CR>**

EXAMPLE: ATDP0331263122<CR>

#### **b. "AT" or "at" + <command body> + <CR>**

EXAMPLE: AT&F <CR>

#### **c. "AT\*" or "at\*" + <command body> + <CR>**

EXAMPLE: AT\*E1 <CR>

**d. “AT#” or “at#” + <command body> + <CR>**

EXAMPLE:AT#B1<CR>

**2. “A/” or “a/”**

This command means: repeat the previous command. Note that a carriage return is not required.

**3. “+++”**

This command is known as the escape sequence and is used when the modem is in data mode and you want to put it into command mode. The ATO command will return the modem to data mode.

**4.1. COMMAND BUFFER**

The AT command buffer is maximum 40 characters long per command entry. The AT, carriage return, line feed, -, (,), space and backspace count as buffer positions. If an AT command overflows the command buffer gives an “ERROR” message which will be displayed and the command will not be executed. Use backspace to correct typing errors.

**4.2. AUTO-BAUD AND AUTO-PARITY DETECTION**

When in command mode, each time an AT command is entered, the SNM31 modem will automatically analyze the prefix “AT” or “at” to detect the speed and parity of your computer or terminal.

SNM31 will accept 300, 1200, 1200/75, 75/1200, 2400, 4800, 9600, 38400 bits per second as DTE speed. The modem has the ability of performing speed conversions which make 38400 bit/s a viable choice. (See &I, \*I, &U, &K commands for details about speed conversion).

The modem will accept even, odd, mark, space and no parity.

#### 4.2.1. Data Length

Each character of the AT command must be an ASCII code with any of the following format combinations.

Case	Start bit	Data bits	Parity	Stop bits	
1.	1	7	1	1	=10
2.	1	8	0	1	=10
3.	1	7	0	2	=10

**NOTE:**

*SNM31 can also work with a 11 bits format but only ON LINE mode. To use this option set the modem with the following format:*

Case	Start bit	Data bits	Parity	Stop bits	S30 =131
4.	1	8	1	1	=11

**IMPORTANT**

*When the modem works with an 11 bits format error corrector or buffer cannot be used. See S30.*

Example of 11 bits EVEN parity.  
With modem OFF-LINE send ATS30=131

See register S30 for details.