Some of the commands have parameters.  The parameter value, usually 0, 1,
or 2, follows the command.  When you do not select a command parameter, the
modem assumes a value of 0.  For example, command echo is disabled when you
use the E command to select a parameter value of 0.  Command echo is
enabled when you designate a parameter value 1.  E used alone is the same
as E0.

| Command | Parameters | Function |
|---------|-----------|----------|
| AT | none | Attention. |
| A/ | none | Repeat preceding command sequence. |
| A | none | Answer call immediately. |
| B | 0 | Select CCITT V.22 operation when communicating at 1200 bps. |
|   | 1 (Default) | Selects Bell 212A at 1200 bps. |
| C | 0 | Not permitted; returns ERROR result code. |
|   | 1 (Default) | Normal transmit carrier switching (preset). |
| D | n | Dial telephone number (n). |
|   | L | Dial the last string that was dialed. |
|   | P | Pulse dial mode. |
|   | T | Tone Touch mode. |
|   | R | Reverse to answer mode after dialing. |
|   | S | Dial stored number. |
|   | W | Wait for dial tone before dialing. |
|   | , | Pause (2 seconds). |
|   | ; | Return to command state after dialing. |
| D | @ | Wait for quiet answer (5 seconds of silence after detecting ringback). |
|   | ! | Flash 0.5 second on-hook. |
|   | ^ | Turn on call tone. |
| E | 0 | Commands are not echoed. |
|   | 1 (default) | Commands are echoed. |
| F | 0 | Select auto-detect mode. |
|   | 1 | Select V.21 or Bell 103. |
|   | 3 | Select V.23 line modulation. |
|   | 4 | Select V.22 or Bell 212A 1200 bps line speed. |
|   | 5 | Select V.22bis line modulation. |
|   | 6 | Select V.32bis or V.32 4800 line modulation. |
|   | 7 | Selection V.32bis 7200 line modulation. |
|   | 8 | Select V.32bis or V.32 9600 line modulation. |
|   | 9 | Select V.32bis 12000 line modulation. |
|   | 10 | Select V.32bis 14400 line modulation. |

| | | |
|---|---|---|
| H | 0 (Default) | On hook (hang-up). |
| | 1 | Go off hook. |
| I | 0 (Default) | Requests product identification code. |
| | 1 | Performs checksum on firmware ROM: returns checksum. |
| | 2 | Performs checksum on firmware ROM; returns OK or ERROR. |
| | 3 | Reports firmware revision number. |
| | 4 | Output Product capabilities To The PC |
| | 5 | Report the country code number. |
| | 6 | Report modem data pump model. |
| L | 0 | Low speaker volume. |
| | 1 | Low speaker volume. |
| | 2 (Default) | Medium speaker volume. |
| | 3 | High speaker volume. |
| M | 0 | Speaker off. |
| | 1 (Default) | Speaker on until carrier detected. |
| | 2 | Speaker always on. |
| | 3 | Speaker on until carrier detected. except during dialing. |
| N | 0 | Automode detection disabled. |
| | 1 | Automode detection Enabled. |
| O | 0 | Return to on-line state. |
| | 1 (Default) | Return to on-line state and retrain. |
| P | | Set Pulse Dial as Default. |
| Q | 0 (Default) | Modem returns result codes. |
| | 1 | Modem does not return result codes. |
| Sr? | | Read And Display Contents of Register (r) |
| Sr=n | | Set Register (r) to Value (N). |
| T | | Set Tone Dial as Default. |
| V | 0 | Numeric result codes. |
| | 1 | Word result codes. |
| | 3 | Extended status set/blind dialing/Busy tone detection. |
| | 4 (Default) | Extended status set/dial tone & busy tone detection. |
| W | 0 | Error Correction Call Progress Not Reported. |
| | 1 | Error Correction Call Progress Reported. |
| | 2 | Reports Modem Speed. |
| X | 0 | Basic status set/blind dialing. |
| | 1 | Extended status set/blind dialing. |
| | 2 | Extended status set/dial tone detection. |

| | | |
|---|---|---|
| | 3 | Reports basic call progress result codes and connection rate. |
| | 4 | Reports all call progress result codes and connection rate. |
| Y | 0 (Default) | Long space disconnect disabled. |
| | 1 | Long space disconnect enabled. |
| Z | 0 (Default) | Recall stored profile 0. |
| | 1 | Recall stored profile 1. |
| ++++ | | Escape Code From On-Line Command State |

Bn    BELL/CCITT mode select

 B0   CCITT V.22 operation at 1200 bps
 B1   BELL 212A operation at 1200 bps (default)

Most 1200 bps modems in the United States operate using the BELL 212A
specification.  To communicate with a 1200 bps modem conforming to the
international CCITT V.22 standard, enter B0 before dialing.


En    Echo back characters in command mode

 E0   no characters echoed back to the computer in command mode
 E1   echoes back characters to the computer typed in command mode
      (default)


This command controls the echoing back of commands to the computer.  In
most personal computer applications, the default E1 is used so that you can
see what you just typed.  When running in half-duplex mode, you should use
the E0 command to avoid having two copies of each character displayed on
the screen.

Fn    Select Line Modulation

This command selects the line modulation according to the parameter
supplied.  The line modulation is fixed unless automode is selected.  This
command interacts with the S37 and the N command.  The parameter value, if
valid, is written to S31 bit 1.  To select line modulation, it is
recommended that either the F command, or a combination of the S37 and the
N command, be used, but not both.

                F0        Selects auto-detected mode.
                F1        Selects V.21 or Bell 103.
                F2        Not supported.
                F3        Selects V.23
                F4        Selects V.22 1200 or Bell 212A.
                F5        Selects V.22 bis.
                F6        Select V.32 bis 4800 or V.32 4800.
                F7        Selects V.32 bis 7200.
                F8        Selects V.32 bis 9600 or V.32 9600.
                F9        Selects V.32 bis 1200.
                F10       Selects V.32 bis 14400.

```
   Hn      Activate switchhook

   H0    go on hook (hang up) (default).
   H1    go off hook (pick up the phone.)

This command makes the modem pick up or hang up the phone in the same way
as a telephone handset is picked up to answer a call or placed back on the
switchhook to terminate a call.  You can use H0 to terminate a call.  You
generally do not need to use the H1 command, since the modem automatically
answers an incoming call if you have not set S0 to 0.


   In      Request product code and ROM checksum.

      I0    display product code
      I1    display ROM checksum
      I2    display ROM checksum as OK or ERROR
      I3    Reports firmware revision
      I4    Reports product capabilities.
      I5    Reports Country Code parameter
      I6    Reports modem data pump model

You use this command as a diagnostic tool when troubleshooting.


   Ln      Speaker Volume

      L0    low speaker volume
      L1    low speaker volume
      L2    medium speaker volume
      L3    high speaker volume

This command controls the volume of the modem's speaker.

   Mn    Speaker on/off commands

      M0    speaker always off
      M1    speaker on until carrier detected (default)
      M2    speaker always on
      M3    disables speaker while dialing and when receiving carrier

You use the M commands to control the speaker in the computer when you use
the modem.  M0 turns the speaker off at all times.  M1 lets you hear dial,
ring, and connection.  The M2 command turns on the speaker at all times,
which might be useful in debugging transmission problems.  M3 lets you
monitor just the ring and connection process.

   Nn    Modulation Handshake (Automode)

This command can be used to assure that a connection is made only at the
specified speed.  If leased line is selected, this command is ignored and
the modem; operates as if ATNO were selected.  Parameters: 0.1 , Default: 1

   ATNO= Requires that the speed of the connection be that specified
         by the value held in S37; if S37=0, the speed of the
         connection must match that at which the last AT command was
         issued.  If the selected speed can be achieved using more than
```

one communication standard (e.g., Bell 212A CCITT V.22 at 1200
bps), the modem also references the selection made with the
ATB command.

ATN1= Permits handshaking to occur at any speed supported by both
modems.  Enables automode detection.  The ATB command is ignored
in this mode and the modem attempts only CCITT mode connections.

On    Place modem in the on-line data mode

    O0    modem returns to on-line state
    O1    modem returns to on-line state and initiates and equalizer
          retrain sequence

When connected to another modem, you might need to go back into command
mode (using +++) to give the modem a command.  After you complete the
commands, an ATO or ATO1 command returns the modem to the on-line condition.

NOTE:

    Retraining lets two 2400-bps modems resynchronize themselves.  The
    modems accomplish this by outputting a signal sequence which consists
    of a 0011 pattern.  Depending on the parity/data bit configuration you
    are using at the time, the retrain patterns are displayed as question
    marks or up arrows.

P    Set Pulse Dial as Default

Causes the modem to assume that all subsequent dial commands are pulse
dialed.

Qn    Enable/disable result codes

    Q0  result codes sent (default)
    Q1  no result codes sent


You use the Q commands to enable or disable result codes (such as OK,
CONNECT 2400, ERROR, and so on).  In the Q0 default mode the modern returns
result codes.  In Q1 mode, the modem does not send result codes.

Sr    Direct Register Commands

  Sr?  This command returns the Decimal value of the S Register r stored
       in the none-volatile-memory.  The range for this is 0 to 95.

  Sr=n This command writes the binary equivalent of n (decimal) in S
       Register r.  The range of n is between 0 and 255.  The modem
       configuration variables are stored in the S Registers.  Some of
       these registers are dedicated to one function, and some share the
       space to store information about the status of different commands
       (bit-mapped).  For an intelligent PC, it may be easier to directly
       write the desired data into the S Registers, than going through the
       longer process of stepping through each of these commands.
       Understanding these registers allows the user to configure the
       modem at any time, and to change only the desired parameters.  All
       registers will return the OK response if n is a legal value,

however, some registers will not actually write the value anywhere.
        These registers are S1, S13-S15, S17, S20,o-S24, and S27.

T    Set Tone Dial as Default

Causes the modem to assume that all subsequent dial commands are tone
dialed.  The user may omit the "T" from the dial string.  Default: none.

Vn   Sets result code format

  V0  selects numeric result codes.
  V1  selects verbal result codes (default)

See "Command Results" for a list of command result codes.

Wn   Negotiation Progress Reporting

An additional set of result codes can be enabled with the W command to
report progress of the negotiation phase of error-correction mode.  These
codes report the carrier speed (300 bps-2400 bps) and the error-correction
protocol.  These messages can also be reported in either numeric or verbose
form.  For example, both 77 and PROTOCOL:LAP-M indicate that the error
correction protocol is LAPM.  (See ATXn command.)

If the error correction link is negotiated and a connection is made, the
appropriate CONNECT XXXX message is reported.

When in error correction mode, the CARRIER XXXX message may indicate one
speed, while the CONNECT XXXX message reports another.  Default: 0

    ATW0=   Error Correction call progress not reported.
    ATW1=   Error Correction call reported.
    ATW2=   Error Correction call progress not reported.
            CONNECT XXXX message reports modem speed.


Xn   Select extended result code set

By using the X commands, you can enable and disable the following modem
functions: no dialtone detect, busy detect, blind dial capability, and send
only the CONNECT message.  Refer to the table below.

                Table 8.X Command Functions

| Function | X0 | X1 | X2 | X3 | X4 |
|---|---|---|---|---|---|
| Bus detected | No | No | No | Yes | Yes |
| Dial tone detected | No | No | Yes | No | Yes |
| Connect message only | Yes | No | No | No | No |
| Blind Dial enabled | Yes | Yes | No | Yes | No |

The default is X4

Sending only the CONNECT message complies with Hayes Smart Modem 300 compatibility.  When you select X1 through X4 the modem returns the full range of connect messages.

When blind dialing, the modem dials regardless of the presence or absence of a dial tone.  The modem waits the number of seconds determined by Register S6, which has a default of 2 seconds.

When you enable X2 or X4 the modem monitors the line for a dial tone instead of blind dialing.  The dial tone must last at least 2 seconds.  If the modem does not detect a dial tone (or not enough dial tone time) within 5 seconds, it cancels the call and returns the NO DIALTONE result code.


Yn   Long Space Disconnect Option

    Y0   Long Space Disconnect Disabled (Default).
    Y1   Long Space Disconnect Enabled.

This option affects how the modem treats breaks in the carrier signal.  If you enable this option, then the modem disconnects from the phone line whenever it loses the carrier.


Zn   Recall Store Profile

    Z0   Recall stored profile 0 (Default).
    Z1   Recall stored profile 1.

Zn makes the modem load modem settings you stored using the &W0 command. You must wait at least 2 seconds after you send this command before you send another command.  The modem ignores any commands you place after the Z command on the line.

+++   The Escape Code

The escape code returns the modem to the command state from the on-line state, without releasing the telephone line.  This command consists of an escape guard time (defined by register S12, default 1 second) and an escape character (ASCII code of which is specified in register S2 default '+'). The escape character must be entered three consecutive times with a guard time before and after the three characters.  Also see the 'O' and &D commands.

| Command | Parameters | Function |
|---------|------------|----------|
| &C | 0 (Default) | DCD (Data Carrier Detect) always on. DCD on indicated presence of data carrier. |
| &D | 0 (Default) 1  2   3 | Modem ignores DTR (Data Terminal Ready). Modem assumes command mode when on-to-off transition is detected on DTR. When on-line with a host system, modem goes on-hook and assumes command mode upon detecting an on-to-off transition on DTR. Modem goes through an initialization |

| | | sequence upon detecting an on-to-off transition to DTR. |
|---|---|---|
| &F | None | Resets the modem to the factory default values for all S registers and commands. |
| &G | 0 (Default)<br>1<br>2 | No guard tone.<br>550 Hz guard tone.<br>1800 Hz guard tone. |
| &J | 0 (Default) | Suitable for RJ-11, RJ-41S, or RJ-45S, type phone jacks.  The auxiliary relay is never operated.<br>Suitable for RJ-12 or RJ-13 type phone jacks. |
| &K | <br>3 (Default)<br>4 | Disable Flow Control.<br>Enable RTS/CTS Flow Control.<br>Enable Xon/Xoff Flow Control. |
| &L | 0 (Default)<br>1 | Dial-up line.<br>Leased Line (not supported).  Modem will respond with OK. |
| &M | 0 (Default)<br>1<br>2<br>3 | Selects asynchronous connect mode.<br>Selects asynchronous connect mode.<br>Select synchronous connect mode.<br>Select synchronous connect mode. |
| &P | 0 (Default)<br>1<br>2<br>3 | Pulse dial make: break ratio 39:61 (USA).<br>Pulse dial make: break ratio 33:67 (UK/HK).<br>Pulse dial make: break ratio 39:61.<br>Pulse dial make: break ratio 33:67. |
| &Q | 0<br>1<br>2<br>3<br>4<br>5 (Default)<br>6 | Select direct asynchronous connect mode.<br>Select synchronous connect mode.<br>Select synchronous connect mode.<br>Reserved.<br>Select autosynchronous operation.<br>Select Error Correction Mode.<br>Select Asynchronous Operation in Normal Mode. |
| &R | 0<br>1 (Default) | Sets the CTS in response to RTS.<br>Allows the modem to ignore RTS. |
| &S | 0 (Default)<br>1 | DSR (Data Set Ready) always on.<br>DSR operates in accordance with EIA RS-232 specifications. |
| &T | | See "Modem Test Commands." |
| &V | | Display active and stored profiles. |
| &W | 0 (Default)<br>1 | Store active profile as profile 0.<br>Store active profile as profile 1 |

| | | |
|---|---|---|
| &X | 0 (Default)<br>1<br>2 | Selects internal timing.<br>Reserved<br>Reserved |
| &Y | 0 (Default)<br>1 | Select profile 0 on power up.<br>Select profile 1 on power up. |
| &Zn=X | | Stored telephone number X in location 0. |

| | | |
|---|---|---|
| \A | 0<br>1<br><br>2<br><br>3 | Set Maximum MNP Block Size to 64 Characters.<br>Set Maximum MNP Block Size to 128 Characters.<br>Set Maximum MNP Block Size to 192 Characters.<br>Set Maximum MNP Block Size to 256 Characters. |
| \Bn | | Send A Break for n milli-Sec Duration. |
| \G | 0<br>1 | Disable Flow Control (Xon/Xoff).<br>Enable Flow Control (Xon/Xoff). |
| \K | 0,2,4<br>1<br>3<br><br>5 | Enter Command Modem Do Not Send a BREAK.<br>Clear Terminal & Modem Buffer Send a BREAK.<br>Do Not Clear Terminal & Modem Buffer Send a Break.<br>Send a BREAK in Sequence with any Transmitted Data. |
| \L | 0<br>1 | Select Stream Mode for MNP Connection.<br>Select Block Mode For MNP Connection. |
| \N | 0<br><br>1<br>2<br>3 (Default)<br>4<br>5 | Select Normal Mode (error correction disabled).<br>Select Direct Mode.<br>Select Reliable Link Mode.<br>Select Auto-Reliable Mode.<br>Force LAPM mode.<br>Force MNP mode. |
| %C | 0<br>1 (Default)<br>2<br>3 | Disable Data Compression.<br>Enable MNP Level 5 Data Compression.<br>Enables V.42bis Data Compression.<br>Enables both V.42bis and MNP 5 Data Compression. |
| %E | 0 (Default)<br><br>1<br><br>3 | Disable Line quality monitor and Auto-retrain.<br>Enable Line quality monitor and fallback/ fall forward<br>Enable Line quality and Auto-retrain. |
| %L | | Report Received Signal Level. |
| %Q | | Report Line Signal Quality. |

&Dn   Data Carrier Detect (DCD) control

    &C0  DCD always on (default).
    &CI  DCD follows state of data carrier.

When n = 0, the modem ignores the hardware signal, and operates as though
a carrier is always present.

When n = 1 the modem operates according to the actual hardware DCD signal.

&Dn  Data Terminal Ready (DTR) control

    &D0  The modem ignores DTR (default).
    &D1  The modem goes into command mode if an on-to-off transition is
         detected on DTR.
    &D2  When on line with a host system, the modem goes on hook and
         assumes command mode upon detecting an on-to-off DTR is off (low).
    &D3  An on-to-off transition on DTR causes the modem to go through
         an initialization sequence.  Default values for all commands and
         registers are reinstated.

The modem ignores any DTR transition that lasts for less than the value
contained in Register S25.  The default is one second.

&F  Restore Default Configuration

The &F command restores the factory default values to all registers and
commands.

&G  Guard Tone Option

    &G0  No guard tone (default).
    &G1  550 Hz guard tone.
    &G2  1800 Hz guard tone.

This command controls the guard tone when the modem is in a CCITT mode.
The modem never sends a tone in Bell modes.

&Jn   Telephone Jack Selection

    &J0  Suitable for an RJ-11, RJ-41S, or RJ-45S type phone jack.  The
         auxiliary relay is never operated.  (default)

    &J1  Suitable for an RJ-12 or RJ-13 type phone jack.  The A lead
         is connected to the A1 lead while the modem is off hook.

This command is only included for compatibility and performs no function
except to load the S-register.

&Kn   PC/Modem Flow Control

Determines how the modem controls the flow of data between the local PC
and the modem.  When the modem terminal buffer is nearly full, the modem
will either send an XOFF or drop CTS to stop the data flow.  When the

buffer is nearly empty, the modem will either send an XON or raise CTS to
start the data flow.

The modem also responds to XON/XOFF characters or RTS stimulus from the PC
by suspending or resuming transmission accordingly.  The modem responds to
PC XON/XOFF characters to the remote modem as data if transparent flow
control is selected.

When in the Direct mode (AT&QO), flow control is not used and the modem
ignores the setting of this command.  Allowable values are 0,3,4,5.
Default: 3.

```
    AT&K0=   Disable flow control.
    AT&K3=   Enable RTS/CTS flow control.
    AT&K4=   Enables XON/XOFF flow control.
```

&Ln   Leased/Dialup Line Selection

```
    &L0   Dial-up line (default)
    &L1   Leased line (not supported)
```

This command controls the selection of leased line or dial-up line.  This
modem supports only a single line.  However, if &L1 is selected, the modem
will respond with OK.

&Mn   Communications Mode

We provided this command for compatibility with earlier versions of the
command set.  Refer to the &Q command.

&Pn   Pulse dial make/break ratio select

```
    &P0   Select, 39% make/61% break 10 pulses per second. (default)

    &P1   Select, 33% make/67% break 20 pulses per second. (default)

    &P1   Select, 39% make/101% break 20 pulses per second. (default)

    &P1   Select, 33% make/101% break 20 pulses per second. (default)
```

This command determines the ratio of off hook (make) to on hook (break)
intervals when pulse dialing.

&Qn - Sync/Async Mode

This command is an extension of the &M command and is used to control the
connection modes permitted.  It is used in conjunction with S36 and S48.
(Also, see \N.)

NOTE:  When the &QO to &Q4 command is issued to select the mode, the
       subsequent connect message will report the modem speed regardless
       of the W command and S95 settings.

```
    &QO   Selects direct asynchronous operation.  The value OOOb is written
          to S27 bits 3, 1, and 0, respectively.  See &MO

    &Q1   Selects synchronous connect mode with async off-line command
```

mode.  The value OO1b is written to S27 bits 3, 1, and 0,
        respectively.  See &M1.  (Serial interface operation only.)

    &Q2   Selects sychronous connect mode with async off-line command
          mode and enables DTR dialing of directory 0.  The value 010b is
          written to S27 bits 3, 1, and 0, respectively.  See &M2 (Serial
          interface operation only.)

    &Q3   Selects synchronous connect mode with async off-line command
          mode and enables DTR to act as Talk/Data switch.  The value 011b
          is written to S27 bits 3, 1, and 0, respectively.  See &M3.  (for
          external modem.)

    &Q4   Selects AutoSync operation.  The value 100b is written to S27
          bits 3, 1, and 0, respectively.  AutoSync operation, when used in
          conjunction with the Hayes Synchronous Interface (HS) capability
          in the PC, provides synchronous communication capability from an
          asychronous terminal.
          Starting AutoSync.  Set registers S19, S20, and S25 to the
          desired values before selecting AutoSync operation with &Q4.
          After the CONNECT message is issued, the modem waits the period
          of time specified by S25 before examining DTR.  If DTR is on, the
          modem enters the synchronous operating state: if DTR is off, the
          modem terminated the line connection and returns to the
          asynchronous command state.
          Stopping Auto Sync.  AutoSync operating is stopped upon loss of
          carrier or the on-to-off transition of DTR.  Loss of carrier will
          cause the modem to return to the asynchronous command state.  An
          on-to-off transition of DTR will cause the modem to return to the
          asynchronous command state and either not terminate the line
          connection (&D1 active) or terminate the line connection (any
          other &Dn command active).

    &Q5   The modem will try to negotiate an error-corrected link.  The
          modem can be configured using S36 to determine whether a failure
          will result in the modem returning on-hook or will result in
          fallback to an asynchronous connection.  The value 101b is
          written to S27 bits 3, 1, and 0, respectively.  (Default)

    &Q6   Selects asynchronous operation in normal mode (speed buffering).
          The value 110b is written to S27 bits 3, 1, and 0, respectively.

          Result Codes:
          OK     n = 0 to 6.
          ERROR   Otherwise.

&Rn   RTS (Request to Send)/CTS (Clear to Send) Options

    &R0   Sets the CTS in response to RTS.  Modem responds with OK.

    &R1   Allows the modem to ignore RTS.  The modem turns on RTS when it
          is on-line and ready to receive synchronous data.  CTS remains on
          until the modem hangs up.  This mode would not be used if half-
          duplex operation is intended.  CTS is always on in the
          asychronous command state.  (default)

&Sn   Data Set Ready (DSR) control

```
    &S0   DSR always on  (default)
    &S1   DSR will become active after answer tones have been detected
          and inactive after the carrier has been lost.
```

As soon as the modem detects a carrier signal from the other modem, DRS is asserted.  As soon as the carrier is confirmed as valid, DCD (carrier detect) is asserted (high).  Both are de-asserted (low) at the same time when the connection is broken.

&V   Display Active and Store Profiles

The &V command causes the modem to display the active and stored profiles (commands and register settings) and stored phone numbers.

```
    &W     Store Profiles.
    &W0    Store active profile as user profile 0.
    &W1    Store active profile as user profile 1.
```

The &W command writes the storable parameters of the active configuration to nonvolatile memory.  The current values of the following commands and registers are stored:

Commands:  Bn, Cn, En, Ln, Mn, P or T, Qn, Vn, Yn, Xn, &Cn, &Dn, &Gn, &Jn
           &Ln, &Mn, &Pn, &Qn, &Rn, &Sn, &T4 or &T5, and &Xn.

Registers: S0, S14, S18, S21, S22, S23, and S26.

&Xn   Clock Source Selection

```
    &X0   Selects internal timing.  The modem uses its own clock signal.

    &X1   Select external timing.  The modem uses the PC clock signal.

    &X2   Select the remote modem clock signal.
```

This command selects the source of the synchronous transmit clock for the modem during synchronous operation.

In asynchronous mode, the transmit and receive clocks are turned off.  In sychronous mode, the clocks are turned on with the frequency 120 Hz or faster corresponding to the speed that is selected for modem operation.

&Yn   Select Stored Profile on Power Up

```
    &Y0   Use user profile 0 on power up.
    &Y1   Use user profile 1 on power up.
```

The &Y command selects which stored profile is used at modem power up or a hard reset.  The selected &Y command survives a power outage.


&Zn=X Store Telephone Number

```
    &Z0=x Store telephone number (x) in telephone memory 0.
    &Z1=x Store telephone number (x) in telephone memory 1.
    &Z2=x Store telephone number (x) in telephone memory 2.
```

&Z3=x Store telephone number (x) in telephone memory 3.

The &Z command lets you store up to four telephone numbers for later
autodialing using the DS command.  For example, to store 817-555-1234 in
the telephone memory 0, type:

                        AT&ZO=8175551234 ENTER

\An    Maximum MNP Block Size

Sets maximum block size for MNP stream link connections.  Use this command
to transmit smaller blocks of data in a reliable link connecting.  The
Parameters are n=0-3 (if n is greater than 3, 3 is used).  Default: 2

        AT\A0=    Sets maximum block size to 64 characters.
        AT\A1=    Sets maximum block size to 128 characters.
        AT\A2=    Sets maximum block size to 192 characters.
        AT\A3=    Sets maximum block size to 256 characters.

\Bn    Transmit Break

When this command is entered during a non-MNP connection, the modem sends a
break signal to the remote modem.  The length of the break is 100 times the
n parameter value in milliseconds.  The Parameters are n=1-9 (if n=0,
default value 3 is used; if n is greater than 9, 9 is used).  Default:3

\Gn    Modem to Modem Flow Control

Enables or disables modem to modem flow control during a Normal mode
connection.

Since the reliable link (error correction) has its own method of flow
control, the AT\Gn command is ignored when error correction is selected
(AT&Q5).  However, the PC to modem flow control remains active during a
reliable link.  The Parameters are n=O,), 1 (if n is greater than 1, 1 is
used).  Default: 0

        AT\G0=    Disables flow control (XON\XOFF).
        AT\G1=    Enables flow control (XON\XOFF).

\Kn    Break Control

Determines what a modem will do when a BREAK is received from the PC or the
remote modem.  During MNP mode, the remote modem's BREAK control setting
determines how the local modem will handle the BREAK.

When a BREAK is received from PC during Normal MNP mode, the modem takes
the following action:

  AT\K0,2,4=   Modem enters the command mode (waiting for AT) without
               sending a BREAK to the remote modem.
  AT\K1=       Modem clears Terminal and Modem buffers and sends a BREAK
               to the remote modem.
  AT\K3=       Modem does not clear the buffers but sends a BREAK to the
               remote modem.
  AT\K5=       Modem sends a BREAK to the remote modem in sequence with
               any data.

When a BREAK is received from the remote modem during Normal mode, the
modem takes the following action:

    AT\K0,1=      Modem clears the terminal and modem buffers and sends a
                  BREAK to the local PC.
    AT\K2,3=      Modem does not clear buffers but sends a BREAK to the
                  local PC.
    AT\K4,5=      Modem sends a BREAK in sequence with any data being
                  buffered.

When a BREAK is received from the PC during Direct mode, the modem takes
the following action:

    AT\K02,4=     Modem enters the command mode (waiting for AT) without
                  sending a break to the remote modem.
    AT\K1=        Modem clears the terminal and modem buffers and sends a
                  BREAK to the remote modem.
    AT\K3=        Modem does not clear the buffers but sends a BREAK To the
                  remote modem.
    AT\K5=        Modem sends a BREAK to the remote modem in sequence with
                  any transmitted data.

NOTE:  In LAPM (V.42 Error Correction), breaks are "timed" meaning the
       modem attempts to preserve the duration of the break when
       transmitting it to the remote modem.  In MNP4, breaks are not
       "timed", as MNP4 has no facility for maintaining the duration of
       the signal; a long break is the same as a short break.

\Ln    MNP Block Transfer

Determines whether the modem will use Block or Stream mode for MNP link.
The Parameters are n=0,1 (if n is greater than 1, 1 is used).  Default:0

\Nn    Operating Mode

This command controls the preferred error correcting mode to be negotiated
in a subsequent data connection.  This command is affected by the OEM
firmware configuration.

    \N0    Selects normal speed buffered mode (disables error-correction
           mode).  (Forces &Q6.)

    \N1    Serial interface selected - Selects direct mode and is
           equivalent to &M0, &QO mode of operation.  (Forces &Q0.)

    \N2    Selects reliable (error-correction) mode.  The modem will first
           attempt a LAPM connection and then an MNP connection.  Failure
           to make a reliable connection results in the modem hanging up.
           (Forces &Q5, S36=4, and S48=7.)

    \N3    Selects auto reliable mode.  This operates the same as \N2
           except failure to make a reliable connection results in the
           modem failing back to the speed buffered normal mode.  (Forces
           &Q5, S36=7, and S48=7.)

    \N4    Selects LAPM error-correction mode.  Failure to make an LAPM

error-correction connection results in the modem hanging up.
          (Forces &Q5 and S48=0.)  Note:  The K1 command can override the
          \N4 command.

     \N5    Selects MNP error-correction mode.  Failure to make an MNP
            error-correction connection results in the modem hanging up.
            (Forces &Q5, S36=4, and S48=128.)


Result Codes:

     OK          n = 0 to 5.
     ERROR       Otherwise.


%C   Enable/Disable Data Compression

Enables or disables data compression negotiation.  The modem can only
perform data compression on an error corrected link.  The parameter value,
if valid, is written to S41 bits 0 and 1.

     %C0    Disables data compression.  Resets S46 bits 0 to 1.
     %C1    Enables MNP 5 data compression negotiation.  Resets S46 bit 1.
     %C2    Enables V.42 bis data compression.  Sets S46 bit 1.
     %C3    Enables both V.42 bis and MNP 5 data compression.  Sets S46 bit
            1.  (Default)


Result Codes:

     OK      n = 0,1 2, or 3.
     ERROR   Otherwise.


%En   Enable/Disable Line Quality Monitor and Auto-Retrain or FallBack/
      Fall Forward

Controls whether or not the modem will automatically monitor the line
quality and request a retrain (%E1) or fall back when line quality is
insufficient or fall forward when line quality is sufficient (%E2).
Applies to dial-up line only.  The parameter value, if valid, is written to
S41 bits 2 and 6.  If enabled, the modem attempts to retrain for a maximum
of 30 seconds.

     %E0    Disable line quality monitor and auto-retrain.  (Default.)
     %E1    Enable line quality monitor and auto-retrain.
     %E2    Enable line quality monitor and fallback/fall forward.
     %E3    Enable line quality monitor and auto-retrain, but hang-up
            immediately when EQM reaches hang-up threshold (fast hang-up).


Result Codes:

     OK      n = 0, 1, or 2.
     ERROR   Otherwise.


Fallback/Fall Forward.  When %E2 is active, the modem monitors the line
quality (EQM).  When line quality is insufficient, the modem will initiate
a rate renegotiation to a lower speed within the V.32 bis/V.32 modulating
speeds.  The modem will keep falling back if necessary until the speed
reaches 4800 bps.  Below this rate, the modem will only do retrains if EQM
thresholds are exceeded.  If the EQM is sufficient for at least one minute,

the modem will initiate a rate renegotiation to a higher speed within the V.
32/V.32bis modulation speeds.  The rate renegotiations will be done without
a retrain if a V.32bis connection is established.  Speeds attempted during
fallback/fall forward are those shown to be available in the rate sequences
exchanged during the initial connection.  Fallback/fall forward is
available in error correction and normal modes, but not in direct mode or
synchronous mode with external clocks.

%L   Report Received Signal

Returns a value identifying the received signal level.  The possible values
are:

    009=Received level of -9 dBm.
    010=Received level of -10 dBm.
    011=Received level of -11 dBm.
    043=Received level of -43 dBm.

If the received signal is greater than .9 dBm, 009 will be reported.  If
the received level is less than .43 dBm, 043 will be reported.
Default:none

%Q   Report Line Signal Quality

Returns the high-order byte of the calculated Eye Quality Monitor (EQM)
value.  The high-order byte can range from 0-255.  However, when the value
is 8 or greater, the modem will automatically retrain if enabled by the
AT&E1 command.  The value for a Normal connection ranges from about 0 to 2
and approaches 8 for a progressively poorer connecting.  Default: none


INTERNAL MODEM REGISTERS

The modem has 19 registers.  These registers are memory locations inside
the modem.  These registers control some aspects of the modem's operation.
You usually do not have to worry about setting any register.  The default
values work for most applications.

(br/all-10/17/94)