Introduction

This document describes the AT-commands that can be used to configure and control the TDW-33, TD-36, TD 36 485 and TR-36 modem.

The TDW-33, TD-36, TD-36 485 and TR-36 different operating modes are controlled by AT-commands.

Modem operation modes:

Example of commands/events that can trigger a change of the modems operation modes
1 – ATD command
2 – Hangup from the remote end
3 – Escape sequence +++
4 – ATO command
5 – ATH command

For more information about Westermo, please visit our website www.westermo.com.
## Abbreviations and definitions

### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCII</td>
<td>American Standard Code for Information Interchange</td>
</tr>
<tr>
<td>AT</td>
<td>ATtention; this two-character abbreviation is always used to start a command line to be sent from TE to Modem</td>
</tr>
<tr>
<td>BCD</td>
<td>Binary Coded Decimal</td>
</tr>
<tr>
<td>ETSI</td>
<td>European Telecommunications Standards Institute</td>
</tr>
<tr>
<td>IRA</td>
<td>International Reference Alphabet (ITU-T T.50 [13])</td>
</tr>
<tr>
<td>ISO</td>
<td>International Standards Organisation</td>
</tr>
<tr>
<td>ITU-T</td>
<td>International Telecommunication Union – Telecommunications Standardization Sector</td>
</tr>
<tr>
<td>TE</td>
<td>Terminal Equipment, e.g. a computer (equal to DTE; Data Terminal Equipment)</td>
</tr>
<tr>
<td>TIA</td>
<td>Telecommunications Industry Association</td>
</tr>
</tbody>
</table>

### Definitions

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;CR&gt;</td>
<td>Carriage return character, which value is specified with command S3.</td>
</tr>
<tr>
<td>&lt;LF&gt;</td>
<td>Linefeed character, which value is specified with command S4.</td>
</tr>
<tr>
<td>&lt;...&gt;</td>
<td>Name enclosed in angle brackets is a syntactical element. Brackets themselves do not appear in the command line.</td>
</tr>
<tr>
<td>[...]</td>
<td>Optional subparameter of a command or an optional part of ME information response is enclosed in square brackets. Brackets themselves do not appear in the command line. When subparameter is not given in parameter type commands, new value equals to its previous value. In action type commands, action should be done on the basis of the recommended default setting of the subparameter.</td>
</tr>
<tr>
<td><strong>underline</strong></td>
<td>Underlined defined subparameter value is the recommended default setting of this subparameter. In parameter type commands, this value should be used in factory settings that are configured by V.25ter command &amp;F0. In action type commands, this value should be used when subparameter is not given.</td>
</tr>
</tbody>
</table>
List of AT-commands

Commands always start with AT (which means ATtention) and finish with a <CR> character.

Information responses and result codes

Responses normally start and end with <CR><LF>, except when the modem is set to “short result code format” with the command ATV0, or when the ATQ1 (no result codes) command is used.

If command syntax is incorrect, an ERROR string is returned. If extended error result codes are configured (+CMEE) and if command syntax is correct but with some incorrect parameters, the +CME ERROR: <Err> or +CMS ERROR: <SmsErr> strings are returned with different error codes. If the command line has been performed successfully, an OK string is returned. In some cases, such as “AT+CPIN?” or (unsolicited) incoming events, the product does not return the OK string as a response. In the AT-command list below, <CR> and <CR><LF> are intentionally omitted.

Special AT-commands

In addition to the commands listed below there are two special commands that do not start with AT. The first command is “A/” without any <CR>. This command makes the modem repeat the last entered command. The second special command is the “+++” (also without <CR>). This command is called “escape sequence” and is used when the modem is in dedicated mode (online mode). When entering “+++” in dedicated mode, the modem will switch from “online mode” to “online command mode”. This means that it is possible to send commands to the local modem. The escape sequence is useful when disconnecting the active call. The disconnection is made with the ATH command (see the list of AT-commands below). The ATO command can also be used when in “online command mode”.
General commands
The AT command line accepts up to 65 characters.

A – Answer a call

<table>
<thead>
<tr>
<th>Supported by:</th>
<th>TDW-33</th>
<th>TD-36</th>
<th>TD-36 485</th>
<th>TR-36</th>
<th>TR-36B</th>
</tr>
</thead>
</table>

**Description:**
The modem will go off-hook and attempt to answer an incoming call if correct conditions are met. Upon successful completion of answer handshake, the modem will go on-line in answer mode.

A successful negotiation must be met during time set by register S7

**Syntax:**
ATA

**Parameters:**
No parameters

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATA</td>
<td>CONNECT&lt;speed&gt;</td>
<td>Answer to this incoming call, call accepted</td>
</tr>
</tbody>
</table>

S register: S7 sets time allowed to connect

&An – Dial Abort Option

<table>
<thead>
<tr>
<th>Supported by:</th>
<th>TDW-33</th>
<th>TD-36</th>
<th>TD-36 485</th>
<th>TR-36</th>
<th>TR-36B</th>
</tr>
</thead>
</table>

**Description:**
The modem normally aborts the option the connection negotiation if a character is received from DTE during the connection phase. This command gives the user the option to let the modem ignore characters.

**Syntax:**
&amp<n>

**Parameters:**

<n>

0: Enables Abort (Default)
1: Disable Abort

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;amp&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
</tbody>
</table>

ERROR

Otherwise

S register: The value is written to S14 bit 4
**Bn – ITU-T or BELL**

**Supported by:** TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
When the modem is configured to allow either option, the modem will select Bell or ITU-T modulation for a line speed connection of 300 or 1200 bit/s. Any other line speed will use a ITU-T modulation standard.

**Syntax:**
B<n>

**Parameters:**

<n>
0: Selects ITU-T Modulation (Default)
1: Selects Bell Modulation

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATB&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S27 bit 6

**\Bn – Transmit Break to Remote**

**Supported by:** TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
In non-error correction mode, the modem will transmit a break signal to the remote modem with a length in multiples of 100 ms according to parameter specified. The command works in conjunction with the \K command.

**Syntax:**
\B<n>

**Parameters:**

<n>
Corresponds to the break length in 100 ms units (Default = 3).

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT\B&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None
&Bn – DTR/TX Dial Option

**Description:**
This command enables the modem to dial a number which is stored with AT&Z0 commands. This is performed when the DTR signal goes from inactive to active signal level or when data is received on the DTE TX line (in command mode). After enabling the Hotcall functionality the modem must be restarted for the function to take affect. Disable the TX Hotcall function by sending an escape sequence ‘+++’ to enter command mode and then set the &Bn command. See also AT&D and AT&K

**Syntax:**
&B<n>

**Parameters:**
<n>
0: Disable DTR/TX Hotcall (Default)
1: Enable DTR Hotcall
2: Enable TX Hotcall (buffered data)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;B&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: S210 bit 5 and 6

Cn – Carrier control

**Description:**
This command is included for compatibility only, and has no effect other than returning a result code.

**Syntax:**
ATC<n>

**Parameters:**
<n>

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATC&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None
%Cn – Select data compression

**Description:**
This command enables or disables data compression. The modem can only perform data compression on an error corrected link. The parameter value, if valid, is written to $S41$ bit 0 and 1.

**Syntax:**
AT%C<n>

**Parameters:**

<&n>

0: No compression. Resets $S46$ bit 1.
1: Enables MNP 5 data compression. Resets $S46$ bit 1.
2: Enables V42bis data compression. Sets $S46$ bit 1
3: Enables both V.42bis and MNP5 data compression. Sets $S46$ bit 1. (Default)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT%C&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

*S register: The value is written to $S41$ bits 0 and 1 and $S46$ bit 1

&Cn – DCD Option

**Description:**
This command controls the DCD output in accordance with the parameter supplied

**Syntax:**
&C<n>

**Parameters:**

<&n>

0: DCD remains ON at all times
1: DCD follows the state of a carrier (Default)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;C&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

*S register: The value is written to $S21$ bit 5
**D – Dial command**

**Supported by:** TDW-33 | TD-36 | TD-36 485 | TR-36 | TR-36B

**Description:**

The ATD command is used for data or fax call.

For a data or a fax call, the application sends the following ASCII string to the product:

\[ \text{ATD<nb>} \]

where \(<nb>\) represents a dial string composed of dial characters and dial modifiers.

The dial characters include the decimal values 0 through 9, letters A,B,C,D, and the symbols “*” and “#”.

**Dial modifier description:**

<table>
<thead>
<tr>
<th>Separator</th>
<th>Name</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>,</td>
<td>Comma separator</td>
<td>Insert a pause in dialing procedure</td>
</tr>
<tr>
<td>$</td>
<td>Bongtone separator</td>
<td>A bong tone needs to be detected before dialing continues</td>
</tr>
<tr>
<td>;</td>
<td>Return command separator</td>
<td>Return to command state</td>
</tr>
<tr>
<td>/</td>
<td>Wait separator</td>
<td>Waits for 0.125 seconds</td>
</tr>
<tr>
<td>:</td>
<td>PABX</td>
<td>Wait for PABX tone</td>
</tr>
<tr>
<td>+</td>
<td>Insert shortkey</td>
<td></td>
</tr>
<tr>
<td>?</td>
<td>Delimiter</td>
<td>Delimiter between number to be dialed (P#) and PSTN security access password</td>
</tr>
<tr>
<td>W</td>
<td>Wait</td>
<td>Wait for dial tone before processing to next character in the dial string</td>
</tr>
<tr>
<td>=</td>
<td>Sec dial separator</td>
<td>Wait for second dialtone</td>
</tr>
<tr>
<td>&amp;</td>
<td>Wait for credit card</td>
<td>Wait for credit card dialing tone before continuing with the dial string.</td>
</tr>
<tr>
<td></td>
<td>dialing tone</td>
<td>If the tone is not detected within the time specified by S6 or S7, the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>modem will abort the rest of the sequence, return on-hook, and generate an</td>
</tr>
<tr>
<td></td>
<td></td>
<td>error message.</td>
</tr>
<tr>
<td>@</td>
<td>Quiet separator</td>
<td>Wait for second dialtone</td>
</tr>
<tr>
<td>L</td>
<td>RE-dial</td>
<td>The L must be immediately after the D with all characters ignored.</td>
</tr>
<tr>
<td></td>
<td>last dialed number</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Select pulse dialing</td>
<td>Pulse dial the numbers that follow until a “T” is encountered.</td>
</tr>
<tr>
<td>\</td>
<td>Select pulse dialing</td>
<td>Pulse dial the numbers that follow until a “P” is encountered.</td>
</tr>
<tr>
<td>T</td>
<td>Select Tone dialing</td>
<td>Pulse dial the numbers that follow until a “P” is encountered.</td>
</tr>
<tr>
<td>S = n</td>
<td>Dial Stored Number</td>
<td>Dial the number stored in the directory n = 0 to 3</td>
</tr>
<tr>
<td>!</td>
<td>Flash</td>
<td>The modem will go on-hook the time specified in S29.</td>
</tr>
</tbody>
</table>
Syntax:
ATD<nb>

Response:
The response to the ATD command is one of the following:

<table>
<thead>
<tr>
<th>Result code</th>
<th>Numeric result code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECT &lt;speed&gt;</td>
<td>Refer to description of result codes</td>
<td>If the call succeeds, for data calls only, &lt;speed&gt; takes the value negotiated by the product</td>
</tr>
<tr>
<td>NO CARRIER</td>
<td>3</td>
<td>Call setup failed or remote user release</td>
</tr>
<tr>
<td>NO DIALTONE</td>
<td>6</td>
<td>Generate when the modem does not detect a valid dialtone during the dial procedure</td>
</tr>
<tr>
<td>BUSY</td>
<td>7</td>
<td>If the called party is already in communication</td>
</tr>
<tr>
<td>NO ANSWER</td>
<td>8</td>
<td>If no hang up is detected after a fixed network time-out</td>
</tr>
</tbody>
</table>

Parameters:
<nb> is the dial string
S register: None
&Dn – DTR Control

**Supported by:** TDW-33, TD-36, TD-36 485, TR-36, TR-36B

**Description:**
This command controls the Data Terminal Ready (DTR) signal.

**Syntax:**
AT&D<n>

**Parameters:**
<n>
0: The DTR signal is ignored (Default)
1: Modem switches from data to command mode when DTR switches from ON to OFF
2: Upon DTR switch from ON to OFF, the call is hang up
3: DTR drop causes the modem to perform a soft reset.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;D&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S21 bits 3 and 4.

En – Echo

**Supported by:** TDW-33, TD-36, TD-36 485, TR-36, TR-36B

**Description:**
This command is used to determine whether the modem echoes characters received by an external application (DTE) or not.

**Syntax:**
ATE<n>

**Parameters:**
<n>
0: Characters are not echoed
1: Characters are echoed (Default)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S14 bit 1
**%En – Enable/Disable Line Quality Monitor and Auto-Retrain or Fallback/Fall Forward**

**Supported by:** TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
Enable/disable Line quality Monitor and Auto-Retrain or Fall back/fall forward. This command controls if the modem automatically monitors the line quality and requests a retrain (%E1) or fall back when line quality is insufficient or a fall forward when line quality is sufficient (%E2). Set S41 bits 2 and 6.

**Syntax:**
AT%E<n>

**Parameters:**

<n>
0: Disable Line Quality and auto-retrain
1: Enable Line Quality and auto-retrain
2: Enable Line Quality Monitor and Fallback/Fall Forward / (Default)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT%E&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S41 bits 2 and 6.
Fn – Select Line Modulation

This command selects which type of modulation will be used on the phone line. If this parameter is set to something other than F0, the line speed will be fixed. (See also the +MS command)

**Syntax:**

```
ATF<n>
```

**Parameters:**

<n>

0: Selects Auto V8 automatically line speed according to the preference of the remote modem. (Default)

1: Selects 300 bit/s, V.21 (if B0 is set) or Bell 103 (if B1 is set).

2: Selects V.22 600 bit/s

3: Selects V.23, see %Fn for speed.

4: Selects V.22 (if B0 is set) or Bell 212A (if B1 is set). 1 200 bit/s.

5: Selects V.22bis,.2 400 bit/s,

6: Selects V.32bis 4 800 bit/s or V.32 4 800 bit/s.

7: Selects V.32bis 7 200 bit/s.

8: Selects V.32bis 9 600 bit/s or V.32. 9 600 bit/s.

9 : Selects V.32bis 12 000 bit/s.

10: Selects V.32bis 14 400 bit/s.

14: Selects V.34

15: Auto

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATF&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>
%Fn – V23 Speed selection

The direction and speed of forward and backchannels for V23C modulation are set with this command.

Syntax:
AT%F<n>

Parameters:
<n>
1: Selects 75Tx/1200Rx
2: Selects 1200Tx/75Rx
3: Selects 1200Tx/1200Rx. (Default)

Command example | Possible responses | Note
--- | --- | ---
AT%F<n> | OK | The command is valid and accepted
 | ERROR | Otherwise

&Fn – Restore Factory Configuration

Description:
The modem loads factory default configuration (profile).
A configuration (profile) consists of a subset of S-registers.

Syntax:
AT&F<n>

Parameters:
<n>
0: Load factory default settings for all commands except Westermo specific commands.
1: Load factory default settings for all commands except Westermo specific commands.
2: Load factory default for Westermo specific commands.

Command example | Possible responses | Note
--- | --- | ---
AT&F<n> | OK | The command is valid and accepted
 | ERROR | Otherwise

S register: None
+FCLASS – Select Active Service Class

**Description:**
This command selects the active service class

**Syntax**
+FCLASS=<n>
+FCLASS?
+FCLASS=?

**Parameters**

<n>
0: Select Data Mode (Default.)
1: Select Facsimile Class 1
8: Select Voice Mode

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+FCLASS&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None

&Gn – Select Guard Tone

**Description:**
The modem generates the guard tone selected by this command according to the parameter supplied (DPSK modulation modes only).

**Syntax:**
&G<n>

**Parameters:**

<n>
0: Disables Guard Tone (Default)
1: Disables Guard Tone
2: Selects 1800 Hz Guard Tone.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;G&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S23 bits 6 and 7.
**Description:**
This command controls whether or not the modem will handle Password and/or Call back functionality.
For compatibility reasons only. See also AT^WCB

**Syntax:**
*G<n>

**Parameters:**
<n>
0: Disables Password Control (Default), corresponds to AT^WCB = 0
1: Enables Password Control, corresponds to AT^WCB = 3

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*G&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

*S register: The value is written to $14$ bit 6.
**+GCI – Country Parameters**

**Supported by**: TDW-33 TD-36 TD-36 485 TR-36 TR-36B

**Description:**
This command selects the country code for modem.

**Syntax:**
AT+GCI = <value>
AT+GCI = ?
AT+GCI?

**Parameters:**
<Value>

*Please refer to Country table*

i.e.

A5: Selects country code for Sweden
B5: Selects country code for America
C7: Universal country code (Default)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+GCI = &lt;value&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

*S register: None*

**Hn – Disconnect (Hang-Up)**

**Supported by**: TDW-33 TD-36 TD-36 485 TR-36 TR-36B

**Description:**
This command initiates a hang-up sequence.

**Syntax:**
ATH<n>

**Parameters:**
<n>

0: The modem will release the line if the modem currently is on-line.
1: If on-hook, the modem will go off-hook and enter command mode.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATH&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

*S register: None*
In – Request identification information

**Description:**
This command causes the product to transmit one or more lines of specific information text.

**Syntax:**
ATI<n>

**Parameters:**

<n>
0: Display max line speed.
1: Reserved
2: Reserved
3: Reserved
4: Display manufacturer identification.
5: Display country code.
6: Display revision identification for modem modulation code
7: Reserved
8: Display switch settings
9: Display Westermo Application Software revision identification.
Other values: “ERROR” string is sent back.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATI0</td>
<td>33600</td>
<td>Max line speed</td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>ATI4</td>
<td>WESTERMO TELEINDUSTRI AB OK</td>
<td>Modem manufacturer identifier</td>
</tr>
<tr>
<td>ATI6</td>
<td>BSMW310_BF533_bfbsmw310_5457OK</td>
<td>Revision identification for modem modulation code</td>
</tr>
<tr>
<td>ATI8</td>
<td>000 000 000 000 000 OK</td>
<td>Switch settings Each DIP switch displayed as a decimal value. S1 S2 S3 S4 Notice switch setting is only read at power-up and ATZ</td>
</tr>
<tr>
<td>ATI9</td>
<td>4101-0201 OK</td>
<td>Westermo SW release</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None
+ICF – Fixed DTE format

**Supported by:**
TDW-33 | TD-36 | TD-36 485 | TR-36 | TR-36B

**Description:**
This command specifies the data format between the modem and the DTE. Notice that format can't be set with rate set to auto.

**Syntax**
AT+ICF = \(<\text{format}\>
AT+ICF = \?
AT+ICF?

**Parameters:**
\(<\text{format}\>\)
0 Auto
5,4 7NI
4,4 7N2
5,1 7E1
5,0 7O1
3,4 8N1
2,1 8E1
2,0 8O1
4,1 7E2
4,2 7O2
1,4 8N2
1,1 8E2
1,2 8O2

**Command example**
<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+ICF?</td>
<td>+ICF: (3,4)</td>
<td>Current format is 8N1</td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>AT+ICF = ?</td>
<td>+ICF(0-5),(0-4)</td>
<td>Allowed values</td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>AT+ICF = (3,4)</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>AT+ICF = &lt;n&gt;</td>
<td>ERROR</td>
<td>If n is not valid</td>
</tr>
</tbody>
</table>

*S register: None*
+IPR – Fixed DTE rate

Supported by: TDW-33 TD-36 TD-36 485 TR-36 TR-36B

Description:
This command specifies the data rate between the modem and the DTE.

Syntax
AT+IPR = <rate>
AT+IPR = ?
AT+IPR?

Parameters:
<rate>: baud rates that can be used by the DCE
0 (enables autobauding)
200
300
600
1200
2400
4800
9600
19200
38400
57600
115200
230400

Command example Possible responses Note
AT+IPR?
+IPR: 9600
OK
Current rate is 9600 bit/s
AT+IPR = ?
+IPR: (0, 300, 600, 1200,
2400, 4800, 9600,
19200, 38400, 57600,
115200),
OK
AT+IPR = 38400
OK
Disable autobauding and set rate to 38400 bit/s
AT+IPR = 0
OK
Enable autobauding
AT+IPR = n
ERROR If n is not valid

S register: None
Kn — Break Control

Description:
This command controls the response of the modem to a break signal received from the terminal equipment, from the remote modem or through the \B command. The modem can respond in three different ways depending on the state of the modem. The value is written to S40 bit 3,4 and 5.

Syntax:
AT\K<n>

Parameters:
<n>

Mode 1
Modem is in on line data mode and a break is received from the DTE.

<n>
0: Enter on-line command modem, no break sent to the remote modem.
1: Clear data buffers and send break to remote modem.
2: Same as 0.
3: Send break to remote modem immediately.
4: Same as 0.
5: Send break to remote modem in sequence with transmitted data (Default).

Mode 2
Modem is in on line command mode and a \B is received in order send as a break to the remote modem.

<n>
0: Clear data buffers, send break to the remote modem.
1: Same as 0.
2: Send break to remote modem immediately.
3: Same as 2.
4: Send break to remote modem in sequence with transmitted data.
5: Same as 4.
Mode 3
A break is received from a remote modem during a non-error corrected connection.

<n>
0: Clear data buffers, send break to the DTE.
1: Same as 0.
2: Send break immediately to DTE.
3: Same as 2.
4: Send break to remote modem in sequence with transmitted data.
5: Same as 4. (Default)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT\K&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S40 bits 3, 4 and 5.

&Kn – DTE-DCE flow control

<table>
<thead>
<tr>
<th>Supported by:</th>
<th>TDW-33</th>
<th>TD-36</th>
<th>TD-36 485</th>
<th>TR-36</th>
<th>TR-36B</th>
</tr>
</thead>
</table>

Description:
This command controls the operation of local flow control between the DTE and DCE.

Syntax:
AT&K<n>

Parameters:
<n>
0: Disables Flow Control (Default)
3: Enables RTS/CTS
4: Enables XON/XOFF

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;K&lt;n&gt;</td>
<td>OK</td>
<td>&lt;n&gt;= 0 to 4</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S39 bits 0, 1 and 2.
Ln – Speaker Volume

**Description:**
Sets the speaker volume control.

**Syntax:**
ATL<n>

**Parameters:**
- L0: Low Volume
- L1: Low Volume
- L2: Medium Volume
- L3: High Volume (Default)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATL&lt;n&gt;</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S22 bits 0 and 1.

%L – Report Line Signal Level

**Description:**
This command returns a value which indicates the received signal level.

**Syntax:**
AT%L

**Parameters:**
None

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT%L</td>
<td>009</td>
<td>–9 dBm signal level</td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None
**L – Display Stored Passwords and Callback numbers

**Supported by:** TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
This command displays stored Password and Callback numbers.

**Syntax:**
AT**L

**Parameters:**
None

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT**L</td>
<td>0 – Password, Callback number</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 – Password, Callback number</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None

Mn – Speaker Control

**Supported by:** TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
Speaker Control command.

**Syntax:**
ATM<n>

**Parameters:**

<n>
0: Speaker off
1: Speaker is on during call establishment, but off when receiving a carrier. (Default)
2: Speaker is always on
3: Same as 1 but only when answering, and not during call establishment.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM&lt;n&gt;</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S22 bits 2 and 3.
+MS – Select Modulation

**Supported by:**
- TDW-33
- TD-36
- TD-36 485
- TR-36
- TR-36B

**Description:**
This command selects the modulation, enables or disables automode, specifies the receive rates and specifies the transmit rates using six subparameters.

**Syntax:**
+MS = <carrier>,<automode>,<min_tx_rate>,<max_tx_rate>,<min_rx_rate>,<max_rx_rate>
+MS = ?
+MS ?

**Parameters:**

*<carrier>*
- V21 300 bit/s or 200 bit/s
- V22 1200 bit/s
- V22B 1200 or 2400 bit/s
- V23C 75/1200, 1200/75 bit/s PSTN-mode dialled connections
- V23HDX 1200/1200 half duplex PSTN dialled connections
  (TD-36 and TD-36 485 also 2 wire leased line)
- V23FDX 1200/1200 bit/s full duplex 4 wire leased line (only TD-36 485)
- V32 4800 or 9600 bit/s
- V32B 4800, 7200, 9600, 12000 or 14400 bit/s
- V34 2400, 4800, 7200, 9600, 12000, 14400, 16800, 19200, 21600, 24000, 26400,
  28800, 31200, 33600 bit/s
- V34FC 2400, 4800, 7200, 9600, 12000, 14400, 16800, 19200, 21600, 24000, 26400,
  28800, 31200, 33600 bit/s
- V90A up to tx = 33600, rx = 56000 bit/s (client mode) Only TDW-33
- V90D up to tx = 56000, rx = 33600 bit/s (server mode) Only TDW-33
- B103 300 bit/s
- B212 1200 bit/s

*<automode>*
- 0: Disable
- 1: Enable

*<min_xx_rate>, <max_xx_rate>*
Minimum and maximum data rate depending on modulation used.

**Command example**
<table>
<thead>
<tr>
<th>AT+MS = ?</th>
<th>The modem sends a string of information to the DTE consisting of supported options</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+MS?</td>
<td>List current configuration</td>
</tr>
</tbody>
</table>

*S register: None*
\Nn – Select Operating mode

**Supported by:**
TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
This command controls the preferred error correcting mode for a data connection.

**Syntax:**
AT\N<n>

**Parameters:**
<n>
0: Selects normal speed buffered mode (disables error-correction mode).
1: Selects direct mode and is equivalent to &M0, &Q0 mode of operation. In this mode the serial port is directly connected to the data pump, which results in the lowest possible delay time. This is useful in i.e. the case of polled PLC systems where the response time is critical.
2: 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.
3: Selects auto reliable mode. This operates the same as \N2 except failure to make a reliable connection results in the modem falling back to the speed buffered normal mode, \n0.
4: Selects LAPM error-correction mode. Failure to make an LAPM error-correction connection results in the modem hanging up. Note: The -K1 command overrides the \n4 command.
5: Selects MNP error-correction mode. Failure to make an MNP error-correction connection results in the modem hanging up.

**Command example** | **Possible responses** | **Note**
--- | --- | ---
AT\N<n> | OK |  
 | ERROR | Otherwise  

S register: The value is written to S36 and S48 (see description).
On – Back to online mode

Description:
If a connection has been established and the modem is in online command mode, this command allows you to return to online data mode either with or without a retrain.

Syntax:
ATO<n>

Parameters:
<n>
0:  Enters on-line mode without a retrain (Default).
1:  Enters on-line mode with a retrain.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATO0</td>
<td>OK</td>
<td>Enters on-line mode without a retrain.</td>
</tr>
<tr>
<td>ATO1</td>
<td>OK</td>
<td>Enters on-line mode with a retrain</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise or if not connected</td>
</tr>
</tbody>
</table>

S register: None
**Pn – Store Password and Callback numbers**

**Description:**
Used for storing password and callback number 0 and 1 for the secure callback function. For compatibility reasons only. See also AT*WCBTAB

**Syntax:**
*P<n>:Password:Callbacknumber

**Parameters:**

<n>
0: Information for password 0 and callback number 0  
1: Information for password 1 and callback number 1

Secure callback entry password must be none or 6-12 characters. secure callback entry number can be 0-20 characters.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>*P0:password:callbacknumber</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None

**Qn – Result Code Control**

**Description:**
The Q command controls the issuing of result codes sent to acknowledge AT commands and call status events (e.g. OK, ERROR, RING).

**Syntax:**
ATQ<n>

**Parameters:**

<n>
0: DCE transmits result codes (default)  
1: Result codes are suppressed and not transmitted

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATQ0</td>
<td>OK</td>
<td>DCE transmits result codes</td>
</tr>
<tr>
<td>ATQ1</td>
<td>OK</td>
<td>Result codes are suppressed and not transmitted</td>
</tr>
</tbody>
</table>

S register: The value is written to S14 bit 2.
%Q – Report Line Signal Quality

**Description:**

Command always respond with OK in on line command mode, ERROR will be sent on all other cases.

For compatibility reasons only. See also AT&V1

**Syntax:**

AT%Q

**Parameters:**

None

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT%Q</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None

&Qn – Asynchronous Mode

**Description:**

This command is used to control connection modes permitted. It is used in conjunction with S36 and S48.

See also AT\Nn.

**Syntax:**

AT&Q<n>

**Parameters:**

<n>

0: Selects direct asynchronous operation. The value 000b is written to S27 bits 3, 1, and 0, respectively.

5: 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).

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

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;Q&lt;n&gt;</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>If not valid</td>
</tr>
</tbody>
</table>

S register: The value is written to S27 (see description).
S – S-Register

**Description:**
Sets and reads S registers.

**Syntax:**
ATS<value>[/< = num>|<?>]

**Parameters:**
<value> Register
< = num> Set value number, 0-255
<?,> Return register

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATS0=2</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>ATS0?</td>
<td>ERROR</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATS0=2</td>
<td>OK</td>
<td>Number value 0-255</td>
</tr>
<tr>
<td>ATS0?</td>
<td>ERROR</td>
<td>Register not valid or number out of range</td>
</tr>
</tbody>
</table>

S register: None

&Sn – Set DSR signal

**Description:**
This command controls the Data Set Ready (DSR) signal.

**Syntax:**
AT&S<n>

**Parameters:**
<n>
0: DSR always on
1: DSR off in command mode, DSR on in data mode

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;S0</td>
<td>OK</td>
<td>DSR always on</td>
</tr>
<tr>
<td>AT&amp;S1</td>
<td>OK</td>
<td>DSR off in command mode, DSR on in data mode</td>
</tr>
</tbody>
</table>

S register: The value is written to S21 bit 6.
**Vn – Result format**

**Supported by:** TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
This command selects the sending of short-form or long-form codes to the DTE.

**Syntax:**
ATV<n>

**Parameters:**
<n>

0 (Information responses): <text><CR><LF>
0 (Result codes): <numeric code><CR>
1 (Information responses): <CR><LF><text><CR><LF>
1 (Result codes): <CR><LF><verbose code><CR><LF>

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATV0</td>
<td>0</td>
<td>DCE transmits limited headers and trailers and numeric result codes</td>
</tr>
<tr>
<td>ATV1</td>
<td>OK</td>
<td>DCE transmits full headers and trailers and verbose response text</td>
</tr>
</tbody>
</table>

*S register: The value is written to S14 bit 3.*
\n – Single Line Connect Message

**Supported by:**
TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description**
This command enables or disables the single line connect message. This command override the ATWn command.
See also ATWn

**Syntax:**
AT\n<n>

**Parameters:**

<n>
0: Connect messages are controlled by the settings X, Y, and S95. (Default)
1: Connect messages are displayed in the single line format described below subject to the command settings V (verbose) and Q (Quiet). In a non-verbose mode (V0), single line connect messages are disabled and a single numeric result code is generated for CONNECT DTE. The single line connect message format is:

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT\n0</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>AT\n1</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

S register: None
&Vn – Display Information

Description
Displays information either of Current Configuration or last Connection Statistics

Syntax:
AT&V<n>

Parameters:
<n>
0: Display Current Configuration and Stored Profiles
1: Display present Connection Statistics
2: Display extended Connection Statistics

Command example Possible responses

AT&V0
ACTIVE PROFILE:
E1 M0 Q0 V1 W0 X4 &A1 &B0 &C1 &D0 &K0 &Q5 &S1 \N4 %F3
S00:001 S02:043 S03:013 S04:010 S05:008 S06:003 S07:075 S08:001 S09:000 S10:004
S95:000

STORED PROFILE 0:
E1 M0 Q0 V1 W0 X4 &A1 &B0 &C1 &D0 &K0 &Q5 &S1 \N4 %F3
S00:001 S02:043 S03:013 S04:010 S05:008 S06:003 S07:075 S08:001 S09:000 S10:004
S95:000

STORED PROFILE 1:
E1 M1 Q0 V1 W0 X4 &A1 &B0 &C1 &D2 &K0 &Q5 &S1 \N4 %F3
S00:001 S02:043 S03:013 S04:010 S05:008 S06:003 S07:075 S08:001 S09:000 S10:004
S95:000

TELEPHONE NUMBERS:
0 = 1 =
2 = 3 =

OK
<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;V1</td>
<td>Norm: IDLE</td>
</tr>
<tr>
<td></td>
<td>Compression: NONE</td>
</tr>
<tr>
<td></td>
<td>Protocol: NONE</td>
</tr>
<tr>
<td></td>
<td>Speed Rx/Tx: 0/0</td>
</tr>
<tr>
<td></td>
<td>Octets Sent/Rec: 0/0</td>
</tr>
<tr>
<td></td>
<td>DataFrames Sent/Rec: 0/0</td>
</tr>
<tr>
<td></td>
<td>ErrorFrames: 0</td>
</tr>
<tr>
<td></td>
<td>ResentFrames: 0</td>
</tr>
<tr>
<td></td>
<td>Frames Sent/Rec: 0/0</td>
</tr>
<tr>
<td></td>
<td>CompressionEfficiency: 100</td>
</tr>
<tr>
<td></td>
<td>ProtocolProgress: 0</td>
</tr>
<tr>
<td></td>
<td>Disconnect Reason: No disconnection</td>
</tr>
<tr>
<td></td>
<td>SNR: 0 dB</td>
</tr>
<tr>
<td></td>
<td>RXLevel: 0 dB</td>
</tr>
<tr>
<td></td>
<td>Echo Level: 0 dB</td>
</tr>
<tr>
<td></td>
<td>Near Echo Level: 0 dB</td>
</tr>
<tr>
<td></td>
<td>Far Echo Level: 0 dB</td>
</tr>
<tr>
<td></td>
<td>Frequency Offset: +0.0 Hz</td>
</tr>
<tr>
<td></td>
<td>Timing Offset: 0</td>
</tr>
<tr>
<td></td>
<td>Line Voltage: 0 V</td>
</tr>
<tr>
<td></td>
<td>Roundtrip Delay: 0 ms</td>
</tr>
</tbody>
</table>

OK

S register: None
**+VRN – Ringback Never Appeared Timer**

*Supported by:* TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
This command sets the length of the time the modem will wait between ringbacks during call originating before the modem can assume that the remote station has gone off hook.

**Syntax**

+VRN=<n>
+VRN?
+VRN=?

**Parameters**

<n>
Decimal number 0 specifying the time period that the modem will wait for Ringback during call origination.

A value of 0 forces the modem to report the OK result code. All other values give ERROR as a result code.

S register: None

---

**+VTS – Send Voice Tone(s)**

*Supported by:* TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description:**
This command causes the modem to send DTMF digits.

**Syntax**

+VTS=\[<freq1>,<freq2>,<dur>\]
+VTS=?

**Parameters**

freq1  (200-3000)
freq2  (200-3000)
dur    (0-255)

S register: None
Wn – Connect message control

**Description:**
This command controls the format of CONNECT message. This command can be override by ATS95 and AT\V commands.

**Syntax:**
ATW<n>

**Parameters:**

<n>
- 0: Upon connection, the modem reports only the DTE speed.
- 1: Upon connection, the modem reports the line speed, the error correction protocol, and the DTE speed respectively.
- 2: Upon connection, the modem reports the DCE speed

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATW</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td></td>
</tr>
</tbody>
</table>

S register: The value is written to S31 bits 2 and 3.

&Wn – Store system setting

**Description:**
This command saves the current (active) configuration (profile), including S-Registers, in one of the two user profiles as denoted by the parameter value.

**Syntax:**
AT&W<n>

**Parameters:**

<n>
- 0: Store the current configuration as profile 0
- 1: Store the current configuration as profile 1

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;W&lt;n&gt;</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

S register: None
**WACCTAB – Accepted numbers for A-number answering**

**Supported by:**
- TDW-33
- TD-36
- TD-36 485
- TR-36
- TR-36B

**Description**
The table can hold the numbers accepted for A-number answering. Up to 10 numbers can be defined, all numbers defined will be compared to the incoming Caller ID when A-number answer is enabled.

**Syntax:**
- `AT*WACCTAB = <entry>,"<num>"`
- `AT*WACCTAB=?`
- `AT*WACCTAB?`

**Parameters:**
- `<entry>`
  Secure callback entry [1-10]
- `<"num">`
  Accepted Caller ID [0-20 characters].

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>AT*WACCTAB = 1,&quot;12345&quot;</code></td>
<td>OK</td>
<td>Set number (12345) in entry 1</td>
</tr>
<tr>
<td><code>AT*WACCTAB = 2,&quot;678&quot;</code></td>
<td>OK</td>
<td>Set number (678) in entry 2.</td>
</tr>
<tr>
<td><code>AT*WACCTAB = 2,&quot;&quot;</code></td>
<td>OK</td>
<td>Delete entry 2</td>
</tr>
<tr>
<td><code>AT*WACCTAB=?</code></td>
<td>OK</td>
<td>List parameters</td>
</tr>
<tr>
<td><code>AT*WACCTAB = ?</code></td>
<td>*WACCTAB : (0-10), (&lt;0-20 CHAR&gt;) OK</td>
<td>List command parameters</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

_S register: None_
**WCID – Caller ID / A-Number**

**Supported by:** TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description**

This command set and display Caller ID parameters and data. The modem supports different standards of CID (Caller Identification) which is set with the mode parameter. Which standard used varies between countries and operators, please check with your operator for correct mode.

The format parameter sets the way of presenting the CID/A-number. When A-number detection is enabled there will be no presentation, but the modem will compare the CID to the numbers stored in the WACCTAB. On a true compare the modem will answer the call immediately. If the CID not compares to a number in the WACCTAB the normal answering procedure controlled by S0 and ATA takes place.

**Syntax:**

AT*WCID = <format>,<mode>

AT*WCID = ?

AT*WCID?

**Parameters:**

<format>

0  Disable Caller ID /A-Number
1  Formated CID
2  Unformated CID
3  A-Number detection

<mode>

0  Between first and second ring
1  After detecting CAS
2  After line reversal
3  DTMF CID

**Command example**

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WCID = 1,3</td>
<td>OK</td>
<td>Selects DTMF Caller ID with formated string presentation.</td>
</tr>
<tr>
<td>AT*WCID = 3,3</td>
<td>OK</td>
<td>Selects A-Number detection based on DTMF CID</td>
</tr>
<tr>
<td>AT*WCID?</td>
<td>*WCID: 1,3</td>
<td>Display current *WCID settings</td>
</tr>
<tr>
<td>AT*WCID = ?</td>
<td>*WCID: (0-3), (0-3)</td>
<td>Display command parameters</td>
</tr>
</tbody>
</table>

S register: None
**WCB – Secure access and Callback**

**Description**

The secure callback functionality makes the established link more secure. After an incoming call the modem will make a callback to either a preconfigured number or to the incoming number. The callback can be protected by a password. The unit can also be configured for a secure access without callback.

If the password is enabled, the calling part will be prompted for the password directly after connection. When the password is entered correctly, the modem will disconnect the current link and make a callback after a preset number of seconds WCBTIME.

If the unit is configured with password security, it will allow data only after the password is correctly entered. After 3 retries of entering wrong password or after 60 seconds, the link will be disconnected and the callback/secure access aborted.

Numbers and password used by the function is stored in the *wcbtab table

See also AT*WCBTAB.

**Syntax:**

AT*WCB = <n>
AT*WCB=?
AT*WCB?

**Parameters:**

<n>

0: Callback disabled (default)
1: Callback enabled, No password needed, callback number only in position 1 in *wcbtab (wcbtab1)
   If "*wcbtab1" is empty no callback will be initiated.
2: Callback enabled, No password needed, callback to incoming number
   No “RING” message will be sent to the local serial port at that time.
   If the Caller ID is present the modem will callback to this number after the time of WCBTIME.
   When the connection is established CONNECT message will be sent to the DTE interface.
   Note that WCID must be enabled and set to the correct format for this function to operate properly.
3: Access security enabled, Password in one or more positions in WCBTAB<n> (x = 1 -10). If a correct password is detected the connection is opened without any callback.

The call request will be accepted silently. No “RING” and “CONNECT” message will be sent to the local DTE interface at that time.

After a successful connection the answering modem will send the message: “PASSWORD: “ to the originating side. Enter password and press return.

There will be three attempts given to enter the password correctly.

There is a fixed timeout of 60s to enter the password.

If the entered password is correct the modem will send message “RING” and “CONNECT” to the DTE interface.

4: Callback enabled, Password and callback number in WCBTAB. The call request will be accepted silently, no “RING” and “CONNECT” message will be sent to the DTE interface at that time.

After a successful connection the answering modem will send the message: “PASSWORD: “ to the originating modem.

When the connection is established the modem will send message “CONNECT” to the DTE interface.

5: Callback enabled, Password in WCBTAB, callback to incoming number. Except password is needed the same as n = 2

6: Callback enabled, Password in one or more positions in *wcbtab (x = 1, 2 .. 10), callback to number that is entered after password check is OK.

7: Used together with the *WI-command to obtain a automatic and secure connection. See n = 5.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WCB = 0</td>
<td>OK</td>
<td>Disable Callback function</td>
</tr>
<tr>
<td>AT*WCB = 1</td>
<td>OK</td>
<td>Enable Callback function</td>
</tr>
<tr>
<td>AT*WCB=?</td>
<td>*WCB: (0,6)</td>
<td>Display command parameters</td>
</tr>
<tr>
<td>AT*WCB?</td>
<td>*WCB:0</td>
<td>Display current settings</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

$ register: None
**WCBTAB – Secure access table**

**Supported by:** TDW-33 TD-36 TD-36 485 TR-36 TR-36B

**Description**
The command handle numbers and password for secure callback, secure access, secure connections etc. The command is used for the following services:

Secure Callback
Secure Access

The Secure Access Table consist of a table of 10 Secure Access Entries. Where a Secure Access Entry consist of outgoing number field (size is up to 20 characters long), a password field (if used, size should be between 6 and 12 characters long, otherwise 0 size)

**Syntax:**

AT*WCBTAB = <entry>,"<num">,"<psword">
AT*WCBTAB=?
AT*WCBTAB?

**Parameters:**

<entry>
Secure callback entry [1-10].

"<num">
Secure callback entry number [0-20 characters].

"<psword">
Secure callback entry password [0, 6-12 characters].

**Command example**

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WCBTAB = 1,&quot;12345&quot;,&quot;QWERTY&quot;</td>
<td>OK</td>
<td>Set number (12345) and password (&quot;QWERTY&quot;) in entry 1</td>
</tr>
<tr>
<td>AT*WCBTAB=2,&quot;678&quot;,&quot;&quot;</td>
<td>OK</td>
<td>Set number (678) in entry 2.</td>
</tr>
<tr>
<td>AT*WCBTAB?</td>
<td>OK</td>
<td>List parameters</td>
</tr>
<tr>
<td>AT*WCBTAB = ?</td>
<td>*WCBTAB : (0-3), (&quot;0-20 CHAR&quot;), (&quot;0,6-12 CHAR&quot;)</td>
<td>List command parameters</td>
</tr>
<tr>
<td>AT*WCBTAB=1,&quot;&quot;,&quot;&quot;</td>
<td>OK</td>
<td>Delete entry</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None
**WCBTIME – Callback delay time**

*Supported by:* TDW-33  TD-36  TD-36 485  TR-36  TR-36B

**Description**
The command sets the number of seconds delay between hang up and callback dialing start.

**Syntax:**
`AT*WCBTIME = <n>`

**Parameters:**

<n>
Callback delay [0-255] s

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>AT*WCBTIME = 10</code></td>
<td>OK</td>
<td>Set callback delay to 10s</td>
</tr>
<tr>
<td><code>AT*WCBTIME?</code></td>
<td>OK</td>
<td>List parameters</td>
</tr>
<tr>
<td><code>AT*WCBTIME = ?</code></td>
<td>*WCBTAB : (0-255)</td>
<td>List command parameters</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

*S register: None*
**WDB – Dial Backup**

Supported by: TD-36 485  TR-36B

**Description**

This command set and display the dial backup parameters and data. When the dial backup function is configured and enabled, the 2-wired leased line will have a PSTN backup line. If the leased line connection is lost, the modem will try (number of retries) to reconnect before it will try to connect (to the number specified) on the PSTN line. If the reconnect time is set and the backup line is used, the modem will close the PSTN connection after the specified number of minutes and then try to connect on the 2-wired leased line.

**Syntax:**

AT*WDB = <"num">,<retries>,<time>
AT*WDB = ?
AT*WDB?

**Parameters:**

<"num">
Dial backup number string (0-16 characters)

<retries>
Number of connect fails (0-9, 3 Default)

<time>
Time before reconnect (0-255, 0 Default = OFF)

**Command example Possible responses Note**

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WDB = &quot;12345&quot;,3,1</td>
<td>OK</td>
<td>Dial 12345 on the PSTN line after 3 failed connection retries on the 2 leased line connection. Disconnect the PSTN line and try to make a new connection on the leased line connection after 1 minute.</td>
</tr>
<tr>
<td>AT*WDB?</td>
<td>*WDB: 12345, 3, 1 OK</td>
<td>List parameters</td>
</tr>
<tr>
<td>AT*WDB = ?</td>
<td>*WDB: (&quot;0-16 CHAR&quot;), (0-9), (0-255) OK</td>
<td>List command parameters</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None
**WI – Information string**

**Description**
The command enable or disable the sending of an information string to the DTE or remote DCE according to the parameter supplied. The parameter values, if valid, are stored in the active profile.

**Syntax:**
AT*WI=","<"string">",<mode>

**Parameters:**

<"string">  
Information string [0-40 characters].

<mode>  
Information string mode [0-5].

0: Disable the function  
1: Send information string to remote DCE when inactivity timer (S30) expires.  
2: Send information string to remote DCE after connect message or DCD.  
3: Send information string to DTE when inactivity timer (S30) expires.  
4: Send information string to DTE after connect message or DCD.  
5: Same as number 2 but with an extra CR.  
Other values: “ERROR” string is sent back.

**Command example** | **Possible responses** | **Note**  
--- | --- | ---  
AT*WI="Info string 1",1 | OK | Send info string to remote DCE when inactivity timer expires.  
AT*WI="Info string",4 | OK | Send info string to DTE when connected.  
AT*WI=":"" | OK | Delete info string and disable function (mode to 0)  
AT*WI=,0 | OK | Disable function  
AT*WI=,1 | OK | Enable function with mode set to 1  
AT*WI? | *WI: string, mode | List parameters  
AT*WI =? | * WI : (0-40 CHAR), (0-255) | List command parameters  
ERROR | Otherwise  

S register: See S30
**WIE – Ignore Errors**

**Description**
With this command all error responses can be disabled and commands is giving an OK response, format according to ATV setting. The intention with this command is to enable use of application which has been written for other types of modems and has been using undocumented / bugs in command interpretation in the replaced modem.

**Syntax:**

AT*WIE=<n>

AT*WIE=?

AT*WIE?

**Parameters:**

<n>

0: Report Errors. (Default).

1: Disable Error reporting.

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WIE=&lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise (depends on setting of command)</td>
</tr>
</tbody>
</table>
**WIOL – Generic I/O list**

**Supported by:** TD-36 485 TR-36B

**Description:**
This command is used to program the list of I/O entries with parameters and data.

**Syntax:**
AT*WIOL = <entry>,<service>,<flag>,<timeout>,<priority>,"<data1">,"<data2>",<data3>,<data4>,<data5>,<data6>

AT*WIOL = ? List all table entries. Listing will present a short form table of the entire I/O list.

AT*WIOL=n? List all data parameters for a defined entry.

AT*WIOL?

**Parameters:**

**<entry>**
I/O entry number, up to 10 entries can be defined.

**<service>**
I/O entry service

0 = NONE No service defined for this entry

1 = DIAL Makes a connection to the number defined in <data1>

2 = SMS <data1> Destination number of the SMS
<data2> SMS-message.
<data3> SMS service provider number
<data4> SMS protocol type (0 = NONE, 1 = UCP2 = TAP)
<data5> Password if required by provider.

3 = TEXT Make a connection to number defined in <data1> and transfer text defined in <data2>.

4 = EMAIL Reserved for future use, service not implemented

5 = OUT Make a connection to the number defined in <data1> and set/pulse the remote output according to pattern defined in string defined in <data2>. The connection is terminated after the pattern is transferred.

6 = CMD AT command specified by <data1> is executed when the entry is triggered

7 = TRANS Makes a connection to number defined by <data1>, I/O is transferred transparently between the two units. The transparent mode must be ended by a timeout.
<flag>
Defines if the establishment of service shall be retried, the time between retries is con-
trolled by register S7.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = NO</td>
<td>No retry, tries once to perform requested action</td>
</tr>
<tr>
<td>1 = RETRY</td>
<td>Retry infinitely to establish service according to current table entry.</td>
</tr>
<tr>
<td>2 = RETRY_3</td>
<td>Do 1 try and max 3 retries.</td>
</tr>
<tr>
<td>3 = NEXT_OK</td>
<td>If current service ends with OK the service specified by next table entry will be trigged. If fail to perform/establish the current entry service the unit will return to idle.</td>
</tr>
<tr>
<td>4 = NEXT_ERR</td>
<td>The unit will execute service specified by next table entry if fail to perform/establish current service. If service according to current table entry terminates normally the unit will return to idle and wait for any new event trigger.</td>
</tr>
<tr>
<td>5 = NEXT_ALLWAYS</td>
<td>The next table entry will always be execute regardless of the exit status of the current.</td>
</tr>
</tbody>
</table>

<timeout>
Timeout is used in Dial and Transparent I/O. The timeout is designed as an inactivity timer and will be retrigged for each Data / I/O transfer. The timeout is the only normal way to terminate Dial and Transparent I/O. Please see Table 1 for reference of state after termination by timeout. Setting a timeout for any other service than transparent I/O will not cause any failure but will not have any function.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 0</td>
<td>The service will not be terminated</td>
</tr>
<tr>
<td>= 1 – 255</td>
<td>The timeout is specified in units of 10 s. Valid values 1 – 255 *10 s (10 s – 2550 s)</td>
</tr>
</tbody>
</table>

<priority>
Priority of the service specified.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 0</td>
<td>An existing connection will not be terminated. Retries will be made according to setting of &lt;flag&gt;, time between retries is set by register S7.</td>
</tr>
<tr>
<td>= 1</td>
<td>The current connection will be terminated before the connection specified by service is established.</td>
</tr>
</tbody>
</table>
The interpretation of this field depends on the service specified for the entry. The field accepts 0 – 20 characters.

<table>
<thead>
<tr>
<th>Service</th>
<th>Function of &lt;&quot;data1&quot;&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAL</td>
<td>Number to connect to</td>
</tr>
<tr>
<td>SMS</td>
<td>Phone number of SMS receiver</td>
</tr>
<tr>
<td>TEXT</td>
<td>Phone number of TEXT receiver, if left empty the TEXT is sent out on the local DTE connection.</td>
</tr>
<tr>
<td>EMAIL</td>
<td>Reserved.</td>
</tr>
<tr>
<td>OUT</td>
<td>Phone number of the modem where the output shall be set. If &lt;data1&gt;, is empty the transfer will be to the local digital output.</td>
</tr>
<tr>
<td>CMD</td>
<td>AT command string to be executed when the entry is triggered, can be used to modify the trigger condition</td>
</tr>
<tr>
<td>TRANS</td>
<td>Phone number of the modem to which the transparent I/O should occur. For dependencies of other parameters and line type, Please See Table 1</td>
</tr>
</tbody>
</table>

<"data1"> Makes a connection to the number defined and start

= number Transparent I/O transfer between the two units.

<"data1"> = empty Transparent I/O transfer will use an existing data connection.

Interpretation of field <"data2"> is also service dependent the size is 0 – 160 characters.

<table>
<thead>
<tr>
<th>Service</th>
<th>Parameter &lt;&quot;data2&quot;&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAL</td>
<td>Not used</td>
</tr>
<tr>
<td>SMS</td>
<td>The SMS message</td>
</tr>
<tr>
<td>TEXT</td>
<td>Text message</td>
</tr>
<tr>
<td>EMAIL</td>
<td>E-mail message</td>
</tr>
<tr>
<td>OUT</td>
<td>A sequence of “101..” to be transferred to the addressed output. Each state will be ( t_a ) long.</td>
</tr>
<tr>
<td>CMD</td>
<td>Not used</td>
</tr>
<tr>
<td>TRANS</td>
<td>Not used</td>
</tr>
</tbody>
</table>
Field `<"data3">` is only used for SMS and EMAIL service.

<table>
<thead>
<tr>
<th>Service</th>
<th>Parameter <code>&lt;&quot;data3&quot;&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>SMS</td>
<td>SMS provider number.</td>
</tr>
<tr>
<td>EMAIL</td>
<td>Reserved for ISP number</td>
</tr>
</tbody>
</table>

Field `<data4>` is only used for SMS and EMAIL service.

<table>
<thead>
<tr>
<th>Service</th>
<th>Parameter <code>&lt;data4&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>SMS</td>
<td>SMS protocol</td>
</tr>
<tr>
<td></td>
<td>0 = No protocol, 1 = UDP, 2 = TAP</td>
</tr>
<tr>
<td>EMAIL</td>
<td>Reserved for mail protocol</td>
</tr>
</tbody>
</table>

Field `<"data5">` is only used for SMS and EMAIL service.

<table>
<thead>
<tr>
<th>Service</th>
<th>Parameter <code>&lt;&quot;data5&quot;&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>SMS</td>
<td>Password for access to SMS provider</td>
</tr>
<tr>
<td>EMAIL</td>
<td>Reserved for password to mail server</td>
</tr>
</tbody>
</table>

Field `<"data6">` is only used for EMAIL service.

<table>
<thead>
<tr>
<th>Service</th>
<th>Parameter <code>&lt;&quot;data6&quot;&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>EMAIL</td>
<td>Reserved for username to mail server</td>
</tr>
<tr>
<td>Connected</td>
<td>Data 1</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
</tr>
<tr>
<td>No</td>
<td>Empty</td>
</tr>
<tr>
<td>No</td>
<td>Empty</td>
</tr>
<tr>
<td>No</td>
<td>Number</td>
</tr>
<tr>
<td>No</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>Empty</td>
</tr>
<tr>
<td>Yes</td>
<td>Empty</td>
</tr>
<tr>
<td>Yes</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>Number</td>
</tr>
<tr>
<td>No</td>
<td>Empty</td>
</tr>
<tr>
<td>No</td>
<td>Empty</td>
</tr>
<tr>
<td>No</td>
<td>Number</td>
</tr>
<tr>
<td>No</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>Empty</td>
</tr>
<tr>
<td>Yes</td>
<td>Empty</td>
</tr>
<tr>
<td>Yes</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>Number</td>
</tr>
</tbody>
</table>

LL = Leased Line PSTN or ISDN  
CS = Circuit Switched PSTN, ISDN or GSM  
* The existing data connection will be paused during transparent I/O transfer. The modem will use the flow control specified by flow control command. If no flow control set DTE data will be discarded during the Transparent I/O transfer. When the transparent I/O transfer is terminated by timeout the connection will revert to data-mode and activate CTS / sending XON.
Example 1:
Define entry #1 for SMS service with 3 retries, priority, receiver of SMS 016480251, message “Hello Westermo”, provider 00491712521002, TAP protocol, password PG1
AT^WIOL =1,2,0,1,"0164251","Hello Westermo","00491712521002",2,"PG1", OK

Example 2:
Define entry #4 for Transparent I/O service with retry for ever, priority, timeout 400s, remote modem number 016480250
AT^WIOL =4,7,1,40,1,"016480250",0,,OK

Example 3:
List the entry table:
AT^WIOL?

Generic I/O Table

<table>
<thead>
<tr>
<th>NR</th>
<th>SERV</th>
<th>FLAG</th>
<th>TIME</th>
<th>PRIO</th>
<th>DATA1</th>
<th>DATA2</th>
<th>DATA3</th>
<th>DATA4</th>
<th>DATA5</th>
<th>DATA6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0164251</td>
<td>Hello..</td>
<td>00491</td>
<td>2</td>
<td>PG1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>1</td>
<td>40</td>
<td>1</td>
<td>01648..</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AT*WIOL=4?
Generic IO Entry 4
4_Service=7
4_Flag=1
4_Timeout=40
4_Priority=1
4_Data1=016480250
4_Data2=
4_Data3=
4_Data4=0
4_Data5=
4_Data6=
OK

**Example 4:**
Read the format string:

AT*WIOL = ?

*WIOL: (1-10), (0-7), (0-255), (0-1), (“0-20 char”), (“0-160 char”), (“0-20 char”),
(0-2), (“0-8 char”), (“0-20 char”)
OK
S register: None
*WIOD – Generic I/O delete entry

Supported by: TD-36 485 TR-36B

Description:
This command delete one or more entries in the Generic I/O list.

Syntax:
AT*WIOD = <n>[,<m>]
AT*WIOD = ?

Parameters:

<n>
Entry number to be deleted (n = 1..10)

[,<m>]
Range of entries to be deleted, from entry <n> to entry <m> (<m> included).

Command example Possible responses Note
--- | --- | ---
AT*WIOD = 2 | OK | Delete Generic IO list entry 2
AT*WIOD = 3,7 | OK | Delete Generic IO list entries 3, 4, 5, 6 and 7
AT*WIOD = ? | *WIOD: (1-10)[,(1-10)] | Display command parameters

S register: None
**WIOP – Generic I/O parameters**

*Supported by:* TD-36 485 TR-36B

**Description:**
This command sets the I/O parameters.

**Syntax:**
AT*WIOP = <ta>,<Tp>,<type>,<trig>,<norm>
AT*WIOP = ?
AT*WIOP?

**Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;ta&gt;</td>
<td>Min trig pulse time in 10 ms increments [1-255]. This parameter sets the minimum time the pulse/level must be active. A pulse shorter than this time will be skipped.</td>
</tr>
<tr>
<td>&lt;Tp&gt;</td>
<td>Pulse period time in 10 ms increments [1-255]. Sets the minimum time between pulses. The number of pulses will be calculated when the time between pulses is longer than Tp. Note Tp must be longer than 2ta.</td>
</tr>
<tr>
<td>&lt;type&gt;</td>
<td>Trig source and type</td>
</tr>
<tr>
<td>0 = NO</td>
<td>Trigger not used</td>
</tr>
<tr>
<td>1 = LEVEL</td>
<td>Trigger source is the digital input level.</td>
</tr>
<tr>
<td>2 = PULSE</td>
<td>Trigger source is an edge on the digital input.</td>
</tr>
<tr>
<td>3 = DCD</td>
<td>Trigger internally coupled to reflect the DCD signal</td>
</tr>
<tr>
<td>4 = DTR</td>
<td>Trigger internally coupled to reflect the DTR signal</td>
</tr>
<tr>
<td>31 = DCD PSTN</td>
<td>Trigger internally coupled to reflect the DCD signal on the PSTN interface</td>
</tr>
<tr>
<td>32 = DCD LL</td>
<td>Trigger internally coupled to reflect the DCD signal on the Leased Line interface</td>
</tr>
<tr>
<td>&lt;trig&gt;</td>
<td>Trigger level</td>
</tr>
<tr>
<td>0 = NO</td>
<td>Trigger not used</td>
</tr>
<tr>
<td>1 = HIGH</td>
<td>Defines that a high level triggers the service</td>
</tr>
<tr>
<td>2 = LOW</td>
<td>Defines that a low level triggers the service</td>
</tr>
<tr>
<td>3 = POS</td>
<td>A positive edge triggers the service</td>
</tr>
<tr>
<td>4 = NEG</td>
<td>A negative edge triggers the service</td>
</tr>
<tr>
<td>5 = FLANK</td>
<td>A positive or negative flank triggers the service</td>
</tr>
<tr>
<td>6 = FLANK 2</td>
<td>A positive flank triggers service 1, a negative flank triggers service 2</td>
</tr>
</tbody>
</table>
Normal inactivated state of the output as well as the source controlling the output.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NO: Output not used</td>
</tr>
<tr>
<td>1</td>
<td>I/O operation: Operation controlled by remote I/O, Transparent or Out</td>
</tr>
<tr>
<td>2</td>
<td>Reserved</td>
</tr>
<tr>
<td>3</td>
<td>DCD: Output will be controlled by DCD. An active DCD will activate the output.</td>
</tr>
<tr>
<td>4</td>
<td>DTR: Output will be controlled by DTR. An active DTR will activate the output.</td>
</tr>
<tr>
<td>31</td>
<td>DCD PSTN: Output is controlled by DCD on the PSTN interface</td>
</tr>
<tr>
<td>32</td>
<td>DCD LL: Output is controlled by DCD on the Leased Line interface</td>
</tr>
</tbody>
</table>

**Note!** If LEVEL triggered input is programmed, all defined entries will be triggered.

**Command example**

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WIOP = 50,100,1,1,3</td>
<td>OK</td>
<td>Command valid and accepted</td>
</tr>
<tr>
<td>AT*WIOP=50,100,2,1,3</td>
<td>OK</td>
<td>Change input type to be pulse triggered</td>
</tr>
<tr>
<td>AT*WIOP?</td>
<td>*WIOP : TA = 50, TP = 100, TYPE = 2, TRIG = 1, NORM = 3 OK</td>
<td>List parameters</td>
</tr>
<tr>
<td>AT*WIOP=?</td>
<td>*WIOP: (1-255), (1-255), (0-4, 31, 32), (0-6), (0-4, 31, 32) OK</td>
<td>List command parameters</td>
</tr>
</tbody>
</table>

*S register: None*
**WIOT – General I/O test**

Supported by: TD-36 485 TR-36B

**Description**
This command executes the specified entry as if it was trigged by the normal trigger condition.

**Syntax:**
AT*WIOT=<entry_num>[,<IO_state>]
AT*WIOT=?

**Parameters:**

<entry_num>
I/O entry index number (0-10) 1-10 selects the entry at the corresponding index in the table. Selecting entry num=0 selects the local output, the state of the output is selected with parameter IO_state.

[,<IO_state>]
The state to set the local output (0 or 1) when entry_num is set to 0.

**Command example**

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WIOT=2</td>
<td>OK</td>
<td>Trigger and execute entry 2 in the table</td>
</tr>
<tr>
<td>AT*WIOT=?</td>
<td>*WIOT: (0-10)[,(0-1)]OK</td>
<td>List command parameters</td>
</tr>
</tbody>
</table>

S register: None
**WRCP – Remote configuration password**

<table>
<thead>
<tr>
<th>Supported by:</th>
<th>TDW-33</th>
<th>TD-36</th>
<th>TD-36 485</th>
<th>TR-36</th>
<th>TR-36B</th>
</tr>
</thead>
</table>

**Description**

This command sets remote configuration password. The remote configuration password decreases the risk of frauding when the remote access is enabled.

If password is left blank a `<CR>` as response to the “C PASSWORD:” prompt will give direct access to the remote online command mode. The remote configuration is reached through giving the remote access escape sequence consisting of four + signs “++++” in on line data mode. When the remote modem detects this escape sequence it will respond with the remote configuration password prompt “C PASSWORD:”.

Notice if remote configuration should be accessible when the Secure Callback is enabled a password must have been set for the remote configuration not to frauding the security.

**Syntax:**

`AT*WRCP=<password>`

`AT*WRCP=?`

`AT*WRCP?`

**Parameters:**

`<password>`
Remote configuration password, must be none or 6 to 12 characters long. Only standard characters are allowed (0-9, a-z)

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>AT*WRCP=QWERTY</code></td>
<td>OK</td>
<td>Set remote access password</td>
</tr>
<tr>
<td><code>AT*WRCP=?</code></td>
<td><code>*WRCP = QWERTY</code> OK</td>
<td>Display current <code>*WRCP</code> password</td>
</tr>
<tr>
<td><code>AT*WRCP=?</code></td>
<td><code>*WRCP: (0, 6-12 CHAR) OK</code></td>
<td>Display command parameters</td>
</tr>
</tbody>
</table>
**WRCA – Remote configuration activate**

**Supported by:**
- TDW-33
- TD-36
- TD-36 485
- TR-36
- TR-36B

**Description**
This command activate the remote configuration function.
Notice commands also controls the remote access via Generic I/O. The Generic I/O access is independent of the remote configuration password set with *WRCP command.

**Syntax:**
AT*WRCA=<n>
AT*WRCP=?
AT*WRCP?

**Parameters:**
<n>
0: Disables Remote Configuration
1: Enables Remote Configuration. (Default).

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WRCA = &lt;n&gt;</td>
<td>OK</td>
<td>The command is valid and accepted</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None

**WRCE – Remote configuration end**

**Supported by:**
- TDW-33
- TD-36
- TD-36 485
- TR-36
- TR-36B

**Description**
This command ends the remote configuration session.

**Syntax:**
AT*WRCE

**Parameters:**
None

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT*WRCE</td>
<td></td>
<td>Ends a remote access session</td>
</tr>
</tbody>
</table>
Xn – Extended Result Codes

**Supported by:** TDW-33, TD-36, TD-36 485, TR-36, TR-36B

**Description:**
This command selects which subset of the result messages will be used by the modem to inform the DTE of the results of commands.

**Syntax:**
ATX<n>

**Parameters:**
<n>
0: Enables result codes 0 through 4, the modem ignores dial tone and BUSY signals, if allowed by the local PTT (blind dialling)
1: Enables all result codes except 6 and 7, the modem ignores dial tone and BUSY signals, if allowed by the local PTT (blind dialling).
2: Enables all result codes except 7, the modem ignores busy signals, if allowed by the local PTT.
3: Enables all result codes except 6, the modem ignores dial tone if allowed by the local PTT.
4: Enables all result codes (default).

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATX&lt;n&gt;</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: The value is written to S22 bits 4, 5 and 6.

&Yn – Designate a Default Reset Profile

**Supported by:** TDW-33, TD-36, TD-36 485, TR-36, TR-36B

**Description:**
This command selects which user profile will be used after a hard reset.

**Syntax:**
AT&Y<n>

**Parameters:**
<n>
0: The modem will use profile 0
1: The modem will use profile 1

<table>
<thead>
<tr>
<th>Command example</th>
<th>Possible responses</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;Y&lt;n&gt;</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

S register: None.
Zn – Soft Reset

Supported by: TDW-33  TD-36  TD-36 485  TR-36  TR-36B

Description:
This command do a soft reset and restores the configuration profile according to the parameter supplied.
If no parameter is specified, zero is assumed.

Syntax:
ATZ<n>

Parameters:
<n>
0: Soft reset, profile 0
1: Soft reset, profile 1

Command example Possible responses Note
ATZ<n> OK <n> = 0,1
ERROR Otherwise

S register: None.

&Zn = x – Store Telephone Number

Supported by: TDW-33  TD-36  TD-36 485  TR-36B

Description:
The modem can store up to four telephone numbers and each telephone number dial string can contain up to 31 digits. Entry 0 is used for DTR and TxHotline call, see AT&B<n>

Syntax:
AT&Z<n> = <string>

Parameters:
<n>
0: Telephone number 0
1: Telephone number 1
2: Telephone number 2
3: Telephone number 3
<string>
Dial string from 0 to 31 characters

Command example Possible responses Note
AT&Z<n> = <string> OK The number is stored
ERROR Otherwise

S register: None.
### S-registers

<table>
<thead>
<tr>
<th>Register</th>
<th>Function</th>
<th>Range</th>
<th>Units</th>
<th>Saved</th>
<th>Default</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0</td>
<td>Rings to Auto-Answer</td>
<td>0–255</td>
<td>Rings</td>
<td>*</td>
<td>2</td>
<td>Determines the number of rings before taking the line. Assigning a value from 1 to 255 places the modem in auto-answer mode. Setting S0 to 0 disables auto-answer mode.</td>
</tr>
<tr>
<td>S1</td>
<td>Ring Counter</td>
<td>0–255</td>
<td>Rings</td>
<td>0</td>
<td></td>
<td>S1 is incremented each time the modem detects a ring signal on the telephone line. It is cleared if no rings occur over any eight second interval.</td>
</tr>
<tr>
<td>S2</td>
<td>Escape Character</td>
<td>0–255</td>
<td>ASCII</td>
<td>*</td>
<td>43 (02Bh)</td>
<td>S2 holds the ASCII value of the escape code. The default value is 43 (ASCII “+”). S2 can be set to any value from 0 to 127. To return to the command state when the escape code is disabled, the distant modem must hang up (local modem loses carrier).</td>
</tr>
<tr>
<td>S3</td>
<td>Carriage Return Character</td>
<td>0–127</td>
<td>ASCII</td>
<td>13 (0Dh)</td>
<td>S3 holds the ASCII value of the carriage return character. Default a value of 13 is used. If the data terminal equipment is non standard, a different value can be used. This character serves as the command line terminator and the result code terminator. This character must not be set to a value greater than 127.</td>
<td></td>
</tr>
<tr>
<td>S4</td>
<td>Line Feed Character</td>
<td>0–127</td>
<td>ASCII</td>
<td>10 (0Ah)</td>
<td>S4 holds the ASCII value of the line feed character. The default value is 10. This character must not be set to a value greater than 127.</td>
<td></td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------</td>
<td>--------</td>
<td>-------</td>
<td>-------</td>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>S5</td>
<td>Backspace Character</td>
<td>0–128</td>
<td>ASCII</td>
<td>*</td>
<td>8</td>
<td>S5 holds the ASCII value of the back space control character. The default value is 8. The backspace character must not be set to a value corresponding to a printable ASCII character (which is between 33 and 126).</td>
</tr>
<tr>
<td>S6</td>
<td>Dial Delay Blind dialing</td>
<td>0–255</td>
<td>s</td>
<td>*</td>
<td>3</td>
<td>This register programs the pause time before continuing the dial process. (in case there is no waiting for dialtone). Units is in seconds. Maximum = 255. Default = 3</td>
</tr>
<tr>
<td>S7</td>
<td>Wait Time for Carrier, Silence, or Dial Tone</td>
<td>0–255</td>
<td>s</td>
<td>*</td>
<td>50</td>
<td>This register gives the answer tone and silence timeout during dialing before hanging up. Units is in seconds. Maximum = 255. Default = 50. In leased line mode, this register is used as synchronisation timeout (answer tone – calling tone synchronisation) between the calling and answering modem. If the timeout is expired, the modem will restart it's training until the number of synchronization attempts is reached.</td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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</tr>
<tr>
<td>S8</td>
<td>Pause time for comma dial modifier</td>
<td>0–255</td>
<td>s</td>
<td>*</td>
<td>2</td>
<td>The function of the “comma” separator depends on the value assigned to register S8. The value represents the pause duration of the modem before dialing the digit following the comma in the dial command line. The pause time is expressed in units of 1 second and ranges from 0 to a maximum value of 255. In some countries the maximum value is limited. If, country code sets a maximum value and, 2 or more consecutive separators are used, only the first will be considered.</td>
</tr>
<tr>
<td>S10</td>
<td>Lost Carrier To Hang Up Delay</td>
<td>1–255</td>
<td>0.1 s</td>
<td>*</td>
<td>14</td>
<td>Register S10 determines the delay time between the loss of the carrier and when the modem disconnects. This delay allows the carrier to drop momentarily without causing a disconnect. The register is given in 100 ms units. Default = 14. If you assign the value to 255 the carrier disconnect function is disabled.</td>
</tr>
<tr>
<td>S11</td>
<td>DTMF Tone Duration</td>
<td>50-255</td>
<td>ms</td>
<td>*</td>
<td>95</td>
<td>Country dependent. Can not be modified.</td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>S12</td>
<td>Escape Prompt Delay</td>
<td>0–255</td>
<td>20 ms</td>
<td>*</td>
<td>50</td>
<td>S12 defines the maximum period, in fiftieths of a second, allowed between receipt of the last character of the three escape character sequence from the DTE and sending of the OK result code to the DTE. If any characters are detected during this time, the OK will not be sent. Note that sending of the OK result code does not affect entry into command mode. Range: 0–255 1/50 of a second Default: 50 (1 second)</td>
</tr>
<tr>
<td>S13</td>
<td>Number of synchronisation attempts</td>
<td>0–255</td>
<td>*</td>
<td>0</td>
<td></td>
<td>In leased line mode register S13 defines the number of synchronization attempts before going idle. Number of synchronisation attempts = 0 means endless loop.</td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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</tr>
<tr>
<td>S14</td>
<td>General Bit Mapped Options</td>
<td>–</td>
<td>–</td>
<td>*</td>
<td>138</td>
<td>Definition: S14 Indicates the status of command options. Bit 0 This bit is ignored Bit 1 Command echo(En) 0 = Disabled 1 = Enabled (Default) Bit 2 Quiet Mode(Qn) 0 = SendResults(Default) 1 = Verbose Bit 3 Result Codes (Vn) 0 = Numeric 1 = Verbose (Default) Bit 4 Dial Abort(&amp;An) 0 = Enable (Default) 1 = Disable Bit 5 Reserved Bit 6 Password(*Gn) 0 = Disabled (Default) 1 = Enabled Bit 7 Originate/Answer 0 = Answer 1 = Originate (Default)</td>
</tr>
<tr>
<td>S21</td>
<td>V.24 General Bit Mapped Options Status</td>
<td>–</td>
<td>–</td>
<td>*</td>
<td>36 (24h)</td>
<td>Definition: S21 Indicates the status of command options. Bit 0 Reserved (0) Bit 1 Reserved (0) Bit 2 Reserved (0) Bit 3-4 DTR behaviour (&amp;Dn) 0 = &amp;D0 1 = &amp;D1 2 = &amp;D2 4 = &amp;D3 (Default) Bit 5 DCD Option 0 = &amp;C0 1 = &amp;C1 Bit 6 DSR Behaviour 0 = &amp;S0 1 = &amp;S1 Bit 7 Reserved</td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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<td>----------------------------------------------------------------------</td>
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</tbody>
</table>
| S22      | Speaker/Results Bit Mapped Options | –     | *     |       | 118 (76h) | Definition: S23  
Indicates the status of command options.  
Bits 0–1 Speaker Volume Ln  
0 = L0  
1 = L1  
2 = L2 (Default)  
3 = L3  
Bits 2–3 Speaker Control Mn  
0 = M0  
1 = M1 (Default)  
2 = M2  
3 = M3  
Bits 4–6 Limit Result Codes Xn  
0 = X0  
4 = X1  
5 = X2  
6 = X3  
7 = X4 (Default)  
Bit 7 Reserved |
| S23      | General Bit Mapped Options Status | –     | *     |       | 0       | Definition: S23  
Indicates the status of command options.  
Bits 0–5 Not Used  
Bits 6–7 Guard Tone(&Gn)  
0 = None(&G0) (Default )  
1 = None(&G1)  
2 = 1800 Hz (&G2) |
| S25      | Delay To DTR                  | 0–255 | 10 ms | *     | 5       | Definition: S25  
Sets the length of time that the modem will ignore DTR for taking the action specified by &Dn. The delay is specified in hundredths of seconds. |
<p>| S26      | RTS to CTS delay              | 10 ms | *     |       |         | Definition: This register is only relevant for synchronous operation with &amp;r0 selected. It sets the time delay before the modem turns CTS on after detecting an off-to-on transition on RTS. |</p>
<table>
<thead>
<tr>
<th>Register</th>
<th>Function</th>
<th>Range</th>
<th>Units</th>
<th>Saved</th>
<th>Default</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>S27</td>
<td>Bit Mapped Options Status</td>
<td>–</td>
<td>*</td>
<td></td>
<td>73</td>
<td>Definition: S27 Indicates the status of command options. Bits 0–5 Reserved BBit 6 CCITT/Bell Select(Bn) 0 = CCITT 1 = Bell Bit 7 Reserved</td>
</tr>
<tr>
<td>S30</td>
<td>Disconnect Inactivity Timer</td>
<td>0–255</td>
<td>10 s</td>
<td>*</td>
<td>0</td>
<td>This register has to be redefined. 10 s.</td>
</tr>
<tr>
<td>S31</td>
<td>Results Bit Mapped Options</td>
<td></td>
<td>*</td>
<td></td>
<td>192</td>
<td>Definition: S31 Indicates the status of command options. Bit 0 Single Line Connect Message \Vn 0 = \V0 1 = \V1 Bits 1 Reserved Bits 2–3 Error Connect Message messages 0 = \W0 (Default) 1 = \W1 2 = \W2 Bits 4–5 Not Used Bit 6-7 Reserved</td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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</tr>
</tbody>
</table>
| S36      | LAPM Failure Control| –     | –     | *     | 7       | Definition: S36  
Bits 0–2 indicates what should happen upon a LAPM failure. These fallback options are initiated immediately upon connection if S48 = 128.0.  
Bits 0–2  
0 = Modem disconnects.  
1 = Modems stays on-line and a direct mode connection will be established.  
2 = Reserved.  
3 = Modem stays on-line and Normal Mode connection will be established.  
4 = An MNP connection is attempted and if it fails, the modem disconnects.  
5 = An MNP connection is attempted and if it fails, a direct mode connection is established.  
6 = Reserved.  
7 = An MNP connection is attempted and if it fails, normal mode connection is established.  
Bits 3–7 Reserved. |
| S38      | Delay Before Hang-Up| –     | –     | *     | 20      | Definition: S38  
Specifies the delay between the modem receives the H command (hang-up) to disconnect and the disconnect action. Applicable to error-correction connection only. Used to ensure that the modem buffer is sent before the the modem disconnects.  
For S38 values 0–254 the modem waits this time until all data is sent from buffer before disconnecting.  
S38 = 255 the modem does not time out. |
<table>
<thead>
<tr>
<th>Register</th>
<th>Function</th>
<th>Range</th>
<th>Units</th>
<th>Saved</th>
<th>Default</th>
<th>Note</th>
</tr>
</thead>
</table>
| S39      | Flow Control Bit Mapped Options Status | –      | –     | *     | 3       | Definition: S39  
Bits 0–2 status of command options.  
0 = &K0 No flow contol.  
3 = &K3 RTS/CTS  
4 = &K4 XON/XOFF  
5 = Reserved XON/XOFF  
Bits 3–7 Reserved |
| S40      | General Bit-Mapped Options Status | –      | –     | *     | 168     | Definition: S40  
Indicates the status of command options.  
Bit 0–2 Reserved  
Bits 3–5 Break handling (\Kn)  
0 = \K0  
1 = \K1  
2 = \K2  
3 = \K3  
4 = \K4  
5 = \K5 (Default)  
Bits 6–7 Reserved |
| S41      | General Bit-Mapped Options Status | –      | –     | *     | 195 (C3h) | Definition: S41  
Indicates the status of command options.  
Bits 0-1 Compression Selection %Cn.  
0 = %C0 Disabled  
1 = %C1 MNP-5  
2 = %C2 V.42bis  
3 = %C3 MNP 5 and V.42bis  
Bits 2, 6 Auto Retrain,  
Fallback/Fall forward.  
Bit 6  Bit 2  
0 0 Disabled %E0  
0 1 Retrain Enabled %E1  
1 0 Fallback/fall forward enabled %E2  
Bit 3–5 Reserved  
Bit 7 Reserved |
<table>
<thead>
<tr>
<th>Register</th>
<th>Function</th>
<th>Range</th>
<th>Units</th>
<th>Saved</th>
<th>Default</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>S46</td>
<td>Data Compression Control</td>
<td>–</td>
<td>–</td>
<td>*</td>
<td>138</td>
<td>Definition: S46 Selects compression.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>[S46=136] Error correction protocol with no compression.</td>
</tr>
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<td></td>
<td>[S46=138] Execute error correction with compression.</td>
</tr>
<tr>
<td>S48</td>
<td>V.42 Negotiation Control</td>
<td>–</td>
<td>–</td>
<td>*</td>
<td>7</td>
<td>Definition: S48 The V.42 negotiation process determines the capabilities of the remote modem.</td>
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<td>However, when the capabilities of the remote modem are known and negotiation is unnecessary, this process can be bypassed if so desired.</td>
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<td></td>
<td>[S48=0] Disable Negotiation and proceed with LAPM.</td>
</tr>
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<td></td>
<td>[S48=7] Enable negotiation.</td>
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<td></td>
<td>[S48=128] Disable negotiation and proceed with the fallback action specified in S36.</td>
</tr>
<tr>
<td>S91</td>
<td>PSTN Transmit Level</td>
<td>0–15</td>
<td>dBm</td>
<td>*</td>
<td>10</td>
<td>Definition: S91 Sets the transmit level. Note that in PSTN mode the country specific parameters limits the maximum value.</td>
</tr>
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<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>S95</td>
<td>Extended Result Codes</td>
<td>–</td>
<td>*</td>
<td></td>
<td>0</td>
<td>Definition: S95 Settings will enable result code regardless of ATW setting.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Bit 0 CONNECT indicates DCD speed</td>
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<td></td>
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<td></td>
<td></td>
<td>Bit 1 Append to CONNECT XXXX result code in error-correction mode</td>
</tr>
<tr>
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<td></td>
<td>Bit 2 Enable +MCR: XXXX result code (XXXX=rate)</td>
</tr>
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<td></td>
<td>Bit 3 Enable +ER:XXXX result code (XXXX=protocol identifier)</td>
</tr>
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<td>Bit 4 Reserved</td>
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<td></td>
<td>Bit 5 Enable +DR: XXXX result code (XXXX=compression type)</td>
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<td></td>
<td>Bit 6–7 Reserved</td>
</tr>
<tr>
<td>S136</td>
<td>PSTN line impedance adaptation</td>
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<td></td>
<td>Definition: S136 Bits 2,3 selects line impedance adaption</td>
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<td>Bit 3 Bit 2</td>
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<td></td>
<td>0 1 Real</td>
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<td>1 1 Complex</td>
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<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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</tr>
<tr>
<td>S200</td>
<td>Multidrop delay before data when carrier activated</td>
<td>0–255</td>
<td>ms</td>
<td>*</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>S201</td>
<td>Multidrop delay after data when carrier activated</td>
<td>0–255</td>
<td>ms</td>
<td>*</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>S202</td>
<td>UART TX buffer threshold (lo byte)</td>
<td>0–255</td>
<td>-</td>
<td>*</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>S203</td>
<td>UART TX buffer threshold (hi byte)</td>
<td>0–255</td>
<td>-</td>
<td>*</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>S204</td>
<td>UART TX buffer character timeout</td>
<td>0-255</td>
<td>ms</td>
<td>*</td>
<td>10</td>
<td>0 = No timeout, 255 = Wait forever, other values timeout in ms</td>
</tr>
<tr>
<td>S205</td>
<td>UART RX buffer threshold (lo byte)</td>
<td>0-255</td>
<td>-</td>
<td>*</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>S206</td>
<td>UART RX buffer threshold (hi byte)</td>
<td>0-255</td>
<td>-</td>
<td>*</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>S207</td>
<td>UART RX buffer character timeout</td>
<td>0-255</td>
<td>ms</td>
<td>*</td>
<td>2</td>
<td>0 = No timeout, 255 = Wait forever, other values timeout in Ms</td>
</tr>
<tr>
<td>S208</td>
<td>UART buffers enabled/disabled</td>
<td>0-1</td>
<td>-</td>
<td>*</td>
<td>0</td>
<td>0 = Disabled, 1 = Enabled</td>
</tr>
<tr>
<td>S209</td>
<td>DTMF format</td>
<td>0-1</td>
<td>-</td>
<td>*</td>
<td>0</td>
<td>0=Format, 1=No formated</td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>S210</td>
<td>General function bitmap</td>
<td>0-255</td>
<td>-</td>
<td>*</td>
<td>5</td>
<td>Bit 0: Break control</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0 = Inactive, 1 = Active</td>
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<td></td>
<td>Bit 1: Protocol</td>
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<td></td>
<td></td>
<td></td>
<td>0 = Inactive, 1 = Active</td>
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<td>Bit 2: Remote config</td>
</tr>
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<td></td>
<td>0 = Inactive, 1 = Active</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td>Bit 3: Ignore error</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>0 = Inactive, 1 = Active</td>
</tr>
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<td></td>
<td>Bit 4: DTR hot-call</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>0 = Inactive, 1 = Active</td>
</tr>
<tr>
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<td></td>
<td>Bit 5: TX hot-call</td>
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<td></td>
<td></td>
<td></td>
<td>0 = Inactive, 1 = Active</td>
</tr>
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<td></td>
<td>Bit 6: TX hot-call buffers: 0 = Send buffer data,</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>1 = Empty buffer</td>
</tr>
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<td></td>
<td></td>
<td>Bit 7: Remote upgrade</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>0 = Inactive, 1 = Active</td>
</tr>
<tr>
<td>S211</td>
<td>On-hook timer delay</td>
<td>0-255</td>
<td>ms</td>
<td>*</td>
<td>0</td>
<td>0 = No delay</td>
</tr>
<tr>
<td>S212</td>
<td>Off-hook timer delay</td>
<td>0-255</td>
<td>ms</td>
<td>*</td>
<td>0</td>
<td>0 = No delay</td>
</tr>
<tr>
<td>S213</td>
<td>DCE data out timer delay</td>
<td>0-255</td>
<td>ms</td>
<td>*</td>
<td>0</td>
<td>0 = No delay</td>
</tr>
<tr>
<td>S214</td>
<td>General function bitmap</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>Bit 0: No Line speed limit</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>(DTEvsLINE): 0 = Inactive, 1 = Active (Default = 0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 1: V.23 HDX PSTN inactivity timer: 0 = Inactive, 1 = Active (Default = 1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 2: V.23 HDX/FDX no disconnect on DCD drop: 0 = Inactive, 1 = Active (Default = 1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 3: V.23 HDX activity timer: 0 = Inactive, 1 = Active (Default = 0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 4: V.23 HDX activity timer no recovery: 0 = Inactive, 1 = Active (Default = 0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 5: Reserved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 6: Reserved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 7: Reserved</td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
</tr>
<tr>
<td>----------</td>
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<td>------</td>
</tr>
<tr>
<td>S215</td>
<td>General function bitmap</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit 0: Connection establish timeout (120 sec): 0 = Disable, 1 = Enable (Default 1) Bit 1: Ignore &amp;F0 and &amp;F1 command (flag not stored) (Default 0) Bit 2: Ignore PnP (Default 0) Bit 3: Ignore NULL character in command mode: 0=Disable, 1=Enable (Default 0) Bit 4: Execute ATZ when ATH command: 0=Disable, 1=Enable (Default 0) Bit 5: Autodetect only enabled once: 0=Disable, 1=Enable (Default 0) Bit 6: Ignore ATZ: 0=Disable, 1=Enable (Default 0) Bit 7: Reserved</td>
</tr>
<tr>
<td>S216</td>
<td>Send break length time in ms</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S217</td>
<td>Send break delay time</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S218</td>
<td>DCD filter time</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S227</td>
<td>Line control register containing %S27 register: 0=Disable</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S228</td>
<td>Line control register containing %S38 register: 0=Disable</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Register</td>
<td>Function</td>
<td>Range</td>
<td>Units</td>
<td>Saved</td>
<td>Default</td>
<td>Note</td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| S230     | DTE (RX) Inactivity timer    | -      | 10 s  | -     | 0       | Bit 0: Connection establish timeout (120 sec): 0 = Disable, 1 = Enable (Default 0)  
Bit 1: Ignore &F0 and &F1 command (flag not stored) (Default 0)  
Bit 2: Ignore PnP (Default 0)  
Bit 3: Reserved  
Bit 4: Reserved  
Bit 5: Reserved  
Bit 6: Reserved  
Bit 7: Reserved                                                                                                                                 |
| S250     | Line status enabled parameter| 0-255  | -     | *     | 1       | 0 = Disabled, 1 = Enabled, other values reserved                                                                                                                                                     |
| S251     | Line status interval parameter| 0-255  | 100 ms| *     | 1       |                                                                                                                                                                                                        |
| S252     | Line status parameter SNR threshold | 0-255 | -     | *     | 8       |                                                                                                                                                                                                        |
| S253     | Line status parameter RX level threshold | 0-255 | -     | *     | 2       |                                                                                                                                                                                                        |
| S254     | Line status                   | -      | -     | -     | 0       | 0 = OK  
4 = Error  
252 = SNR disconnect  
253 = RX level disconnect  
Other values reserved                                                                                                                                                                                 |
### Result codes Codes and values:

<table>
<thead>
<tr>
<th>Short Form</th>
<th>Long Form</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>OK</td>
<td>A command line has been executed.</td>
</tr>
<tr>
<td>1</td>
<td>CONNECT 1200</td>
<td>For X command values specifying no speed reporting, the modem has connected to the line and either the line speed is 300 bit/s and line speed is enabled (W2), or the DTE speed is 300 bit/s and DTE reporting is enabled (W0).</td>
</tr>
<tr>
<td>2</td>
<td>RING</td>
<td>Indicates an incoming call (if valid RING)</td>
</tr>
<tr>
<td>3</td>
<td>NO CARRIER</td>
<td>Sent when attempting a call if: 1. Ringback is detected and later ceases but no carrier is detected within the period of time predetermined by register S7, or 2. No ringback is detected within the period of time determined by register S7. Also sent when the modem auto-disconnects due to loss of carrier. For X0, sent for the following conditions: 1. If busy tone detection is enforced, busy or circuit busy has been detected. 2. If dial tone detection is enforced or selected, dial tone has not been detected.</td>
</tr>
<tr>
<td>4</td>
<td>ERROR</td>
<td>Sent during an attempt to execute a command line if any of the following conditions occur: 1. The command line contains a syntax error. 2. The modem can not execute a command contained in the command line, i.e., the command does not exist or is not supported. 3. A command parameter within the command line is outside the permitted range. For X0, X1, X2, and X3 this message is sent instead of DELAYED and BLACKLISTED.</td>
</tr>
<tr>
<td>5</td>
<td>CONNECT 600</td>
<td>The modem has connected to the line and either the line speed is 1200 bit/s and DCE speed reporting is enabled, or the DTE speed is 1200 bit/s and DTE speed reporting is enabled.</td>
</tr>
<tr>
<td>6</td>
<td>NO DIALTONE</td>
<td>For X2 and X4, the modem has been instructed to wait for dial tone during dialing but none is received.</td>
</tr>
<tr>
<td>7</td>
<td>BUSY</td>
<td>For X3 and X4, if busy tone detection is enforced, the busy(engaged) signal is detected on the line when the modem is attempting to originate a call.</td>
</tr>
<tr>
<td>8</td>
<td>NO ANSWER</td>
<td>The modem is attempting to originate a call if a continuous ringback signal is detected on the line until the expiration of the timer S7.</td>
</tr>
<tr>
<td>9</td>
<td>CONNECT 600</td>
<td>Connection, DTE speed 600 bit/s, DTE speed enabled</td>
</tr>
<tr>
<td>10</td>
<td>CONNECT 2400</td>
<td>The modem has connected to the line and either line speed 2 400 bit/s, DCE speed reporting is enabled, or the DTE speed 4 800 bit/s, and DTE speed reporting is enabled.</td>
</tr>
<tr>
<td>Short Form</td>
<td>Long Form</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
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</tr>
<tr>
<td>11</td>
<td>CONNECT 4 800</td>
<td>The modem has connected to the line and either line speed 4 800 bit/s., DCE speed reporting is enabled, or the DTE speed 4 800 bit/s, and DTE speed reporting is enabled.</td>
</tr>
<tr>
<td>12</td>
<td>CONNECT 9 600</td>
<td>The modem has connected to the line and either line speed 9 600 bit/s., DCE speed reporting is enabled, or the DTE speed 9 600 bit/s, and DTE speed reporting is enabled.</td>
</tr>
<tr>
<td>13</td>
<td>CONNECT 7 200</td>
<td>The modem has connected to the line at 7 200 bit/s and DCE speed reporting is enabled.</td>
</tr>
<tr>
<td>14</td>
<td>CONNECT 12 000</td>
<td>The modem has connected to the line at 12 000 bit/s and DCE speed reporting is enabled.</td>
</tr>
<tr>
<td>15</td>
<td>CONNECT 14 400</td>
<td>The modem has connected to the line at 14 400 bit/s and DCE speed reporting is enabled.</td>
</tr>
<tr>
<td>16</td>
<td>CONNECT 19 200</td>
<td>The modem has connected to the line and either line speed 19 200 bit/s., DCE speed reporting is enabled, or the DTE speed 19 200 bit/s, and DTE speed reporting is enabled.</td>
</tr>
<tr>
<td>17</td>
<td>CONNECT 38 400</td>
<td>Connection, DTE speed 38 400 bit/s, DTE speed enabled</td>
</tr>
<tr>
<td>18</td>
<td>CONNECT 57 600</td>
<td>Connection, DTE speed 57 600 bit/s, DTE speed enabled</td>
</tr>
<tr>
<td>19</td>
<td>CONNECT 115 200</td>
<td>Connection, DTE speed 115 200 bit/s, DTE speed enabled</td>
</tr>
<tr>
<td>22</td>
<td>CONNECT 75TX/1200RX</td>
<td>The modem has established a V.23 originate connection and line speed reporting is enabled.</td>
</tr>
<tr>
<td>23</td>
<td>CONNECT 1200TX/75RX</td>
<td>The modem has established a V.23 answer connection and line speed reporting is enabled.</td>
</tr>
<tr>
<td>24</td>
<td>DELAYED</td>
<td>For X4, sent when a call fails to connect and the number is considered “delayed” due to country blacklisting requirements.</td>
</tr>
<tr>
<td>32</td>
<td>BLACKLISTED</td>
<td>For X4, sent when a call fails to connect and the number is considered “blacklisted” due to country blacklisting requirements.</td>
</tr>
<tr>
<td>33</td>
<td>FAX</td>
<td>A fax modem connection is established in a facsimile mode.</td>
</tr>
<tr>
<td>35</td>
<td>DATA</td>
<td>A data modem connection is established in a facsimile mode.</td>
</tr>
<tr>
<td>40</td>
<td>+MRR: 300</td>
<td>The modem has connected to the line at 300 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>44</td>
<td>+MRR: 1200/75</td>
<td>The V.23 backward channel is detected and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>45</td>
<td>+MRR: 75/1200</td>
<td>The V.23 forward channel is detected and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>46</td>
<td>+MRR: 1200</td>
<td>The modem has connected to the line at 1200 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>Short Form</td>
<td>Long Form</td>
<td>Description</td>
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</tr>
<tr>
<td>47</td>
<td>+MRR: 2400</td>
<td>The modem has connected to the line at 2400 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>48</td>
<td>+MRR: 4800</td>
<td>The modem has connected to the line at 4800 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>49</td>
<td>+MRR: 7200</td>
<td>The modem has connected to the line at 7200 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>50</td>
<td>+MRR: 9600</td>
<td>The modem has connected to the line at 9600 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>51</td>
<td>+MRR: 12000</td>
<td>The modem has connected to the line at 12000 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>52</td>
<td>+MRR: 14400</td>
<td>The modem has connected to the line at 14400 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>53</td>
<td>+MRR: 16800</td>
<td>The modem has connected to the line at 16800 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>54</td>
<td>+MRR: 19200</td>
<td>The modem has connected to the line at 19200 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>55</td>
<td>+MRR: 21600</td>
<td>The modem has connected to the line at 21600 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>56</td>
<td>+MRR: 24000</td>
<td>The modem has connected to the line at 24000 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>57</td>
<td>+MRR: 26400</td>
<td>The modem has connected to the line at 26400 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>58</td>
<td>+MRR: 28800</td>
<td>The modem has connected to the line at 28800 bit/s and carrier reporting is enabled (see S95 and Xn).</td>
</tr>
<tr>
<td>59</td>
<td>CONNECT 16 800</td>
<td>Connection, line speed 16 800 bit/s and DTE speed reporting is enabled</td>
</tr>
<tr>
<td>61</td>
<td>CONNECT 21 600</td>
<td>Connection, line speed 21 600 bit/s and DTE speed reporting is enabled</td>
</tr>
<tr>
<td>62</td>
<td>CONNECT 24 000</td>
<td>Connection, line speed 24 000 bit/s and DTE speed reporting is enabled</td>
</tr>
<tr>
<td>63</td>
<td>CONNECT 26 400</td>
<td>Connection, line speed 26 400 bit/s and DTE speed reporting is enabled</td>
</tr>
<tr>
<td>64</td>
<td>CONNECT 28 800</td>
<td>Connection, line speed 28 800 bit/s and DTE speed reporting is enabled</td>
</tr>
<tr>
<td>66</td>
<td>+DR:ALT</td>
<td>The modem has connected to the line in MNP Class 5 and +DR: message reporting has been enabled (see S95, Wn, and Xn)</td>
</tr>
<tr>
<td>67</td>
<td>+DR:V.42B</td>
<td>The modem has connected to the line in V.42b and +DR: message reporting has been enabled (see S95, Wn, and Xn)</td>
</tr>
<tr>
<td>69</td>
<td>+DR:NONE</td>
<td>The modem has connected to the line without compression and +DR: message reporting has been enabled (see S95, Wn, and Xn)</td>
</tr>
<tr>
<td>Short Form</td>
<td>Long Form</td>
<td>Description</td>
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</tr>
<tr>
<td>70</td>
<td>+ER: NONE</td>
<td>The modem has connected to the line without any error correction mode and +ER: message reporting has been enabled.</td>
</tr>
<tr>
<td>77</td>
<td>+ER: LAPM</td>
<td>The modem has connected to the line in V.42 LAPM error correction mode and +ER: message reporting has been enabled.</td>
</tr>
<tr>
<td>78</td>
<td>+MRR: 31 200</td>
<td>The modem has connected to the line at 31 200 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>79</td>
<td>+MRR: 33 600</td>
<td>The modem has connected to the line at 33 600 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>80</td>
<td>+ER: ALT</td>
<td>Sent when modem has connected in the MNP mode of error correction, and +ER: message has been enabled ( see S95, Wn, and Xn ).</td>
</tr>
<tr>
<td>83</td>
<td>LINE IN USE</td>
<td>The modem attempted to go off-hook when an extension was already occupying the line.</td>
</tr>
<tr>
<td>84</td>
<td>CONNECT 33 600</td>
<td>Connection, DTE speed 33 600 bit/s, DTE speed reporting is enabled</td>
</tr>
<tr>
<td>91</td>
<td>CONNECT 31 200</td>
<td>Connection, DTE speed 31 200 bit/s, DTE speed reporting is enabled</td>
</tr>
<tr>
<td>134</td>
<td>+MCR:B103</td>
<td>The modem has connected to the line with Bell 103 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>135</td>
<td>+MCR:B212</td>
<td>The modem has connected to the line with Bell 212 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>136</td>
<td>+MCR:V21</td>
<td>The modem has connected to the line with V21 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>137</td>
<td>+MCR:V22</td>
<td>The modem has connected to the line with V22 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>138</td>
<td>+MCR:V22B</td>
<td>The modem has connected to the line with V22B modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>139</td>
<td>+MCR:V23</td>
<td>The modem has connected to the line with V23 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>140</td>
<td>+MCR:V32</td>
<td>The modem has connected to the line with V32 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>141</td>
<td>+MCR:V32B</td>
<td>The modem has connected to the line with V32B modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>142</td>
<td>+MCR:V34</td>
<td>The modem has connected to the line with V34 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>145</td>
<td>+MCR:V90</td>
<td>The modem has connected to the line with V90 modulation and modulation reporting is enabled ( see +MR, Wn, and Xn ).</td>
</tr>
<tr>
<td>180</td>
<td>CONNECT 28000</td>
<td>The modem has connected to the line at 28000 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>Short Form</td>
<td>Long Form</td>
<td>Description</td>
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</tr>
<tr>
<td>181</td>
<td>CONNECT 29333</td>
<td>The modem has connected to the line at 29333 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>182</td>
<td>CONNECT 30667</td>
<td>The modem has connected to the line at 30667 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>183</td>
<td>CONNECT 33333</td>
<td>The modem has connected to the line at 33333 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>184</td>
<td>CONNECT 34667</td>
<td>The modem has connected to the line at 34667 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>185</td>
<td>CONNECT 37333</td>
<td>The modem has connected to the line at 37333 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>186</td>
<td>CONNECT 38667</td>
<td>The modem has connected to the line at 38667 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>187</td>
<td>CONNECT 41333</td>
<td>The modem has connected to the line at 41333 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>188</td>
<td>CONNECT 42667</td>
<td>The modem has connected to the line at 42667 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>189</td>
<td>CONNECT 41333</td>
<td>The modem has connected to the line at 41333 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>190</td>
<td>CONNECT 46667</td>
<td>The modem has connected to the line at 46667 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>191</td>
<td>CONNECT 49333</td>
<td>The modem has connected to the line at 49333 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>192</td>
<td>CONNECT 50667</td>
<td>The modem has connected to the line at 50667 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>193</td>
<td>CONNECT 53333</td>
<td>The modem has connected to the line at 53333 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>194</td>
<td>CONNECT 54667</td>
<td>The modem has connected to the line at 54667 bit/s and DCE reporting is enabled.</td>
</tr>
<tr>
<td>195</td>
<td>+MRR:28000</td>
<td>The modem has connected to the line at 28000 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>196</td>
<td>+MRR:29333</td>
<td>The modem has connected to the line at 29333 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>197</td>
<td>+MRR:30667</td>
<td>The modem has connected to the line at 30667 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>198</td>
<td>+MRR:33333</td>
<td>The modem has connected to the line at 33333 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>199</td>
<td>+MRR:34667</td>
<td>The modem has connected to the line at 34667 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>200</td>
<td>+MRR:37333</td>
<td>The modem has connected to the line at 37333 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>Short Form</td>
<td>Long Form</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>201</td>
<td>+MRR:38667</td>
<td>The modem has connected to the line at 38667 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>202</td>
<td>+MRR:41333</td>
<td>The modem has connected to the line at 41333 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>203</td>
<td>+MRR:42667</td>
<td>The modem has connected to the line at 42667 bit/s and carrier reporting is enabled.</td>
</tr>
<tr>
<td>204</td>
<td>+MRR:45333</td>
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# Country codes:

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*Country code table 1.*

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*Country code table 2.*

All countries in Country code table 2, internally refer to the universal country and can be activated using the specific country code or by using code C7.

**REMARKS:**

Note A: There is no country code for Taiwan in ITU-T Recommendation T.35

Note B: Following countries follow the French settings

- French Polynesia
- Guadeloupe (french dep.)
- Guiana (french dep.)
- Martinique (french dep.)
- Mayotte
- New Caledonia
- Reunion (french dep.)
- S. Pierre and Miquelon
- Wallis and Futuna
Note C: Following countries follow the UK settings
• Falkland Islands
• Channel Islands: Jersey

Note D: Countries previously part of the USSR normally follow the USSR settings
• Armenia (ARM)
• Azerbaijan (AZE)
• Belarus (BLR)
• Estonia (EST)
• Georgia (GEO)
• Kazakhstan (KAZ)
• Kyrgyzstan (KGZ)
• Latvia (LVA)
• Lithuania (LTU)
• Moldova (MDA)
• Russian Federation (RUS)
• Tajikistan (TJK)
• Turkmenistan (TKM)
• Ukraine (UKR)
**Priority:**
Country Profile has precedence of all other profiles
Factory Profile has precedence of profile 0 and profile 1, however, this is not always the case.
### Parameters affected by default settings

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<th>Command</th>
<th>Automatically saved in EEPROM &amp; F2 sets default</th>
<th>Incl. Factory Setting, &amp;F sets default and &amp;W saves</th>
<th>Incl. Country Profile</th>
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