

With the following basic AT commands, you can make calls directly, select the dialing method (tone or pulse), control the speaker volume, and perform a number of other basic modem operations.

**IMPORTANT:** You must be in the Command mode of your communication software to use the AT commands. Refer to the documentation that came with your communications software for information on entering the Command mode.

- ? **AT** -- This prefix begins all but two commands you issue to the modem locally, and tells the modem "ATtention! commands to follow".
- ? **D** -- Dial. Use the D command to dial a telephone number from the command line. The format of the command is as follows:

ATD [string]

The string parameter can contain up to 45 characters, the phone number and dial modifiers. The dial modifiers instruct a modem how to place the call. Do not use any added characters, such as parentheses or hyphens in the phone number.

- ? **+++** -- Escape Character Sequence. After you have connected to another modem, you may need to return to command mode to adjust the modem configuration, or more commonly, to hang up. To do this leave your keyboard idle (press no keys) for at least one second, then press "+" three times. This is one of the two commands that do not use the AT prefix, or a carriage return to enter. After a moment, the modem will respond with OK indicating you have been returned to Command mode.
- ? **A** -- Repeat. This command does not use the AT prefix nor does it require a carriage return to enter. Typing this command causes the modem to repeat the last command line entered, and is most useful for redialing telephone numbers which are busy.
- ? **&Fn** -- Factory Defaults. This command (in which n=0 or 1) returns all parameters to the selected set of factory defaults.
- ? **H** -- Hang Up. This command tells the modem to go "on-hook", or to disconnect the telephone line.
- ? **O** -- On-Line. This command returns the modem to the on-line mode and is usually used after the escape sequence (+++) to resume communication.
- ? **Zn** -- Reset Modem. This command (in which n=0 or 1) resets the modem to the configuration profile stored in non-volatile memory location 0 or 1

Command modifiers define additional parameters to the modem that instruct the modem to perform certain functions automatically when dialing a phone number. They are only valid when they are contained in a dial string (that follows the D command). The commands that are used to accomplish this task are called dial modifiers, and are placed in the dial string prior to issuing the command.

Syntax: ATD{dial modifier} 1234567 [Enter]

Basic dial modifiers are:

- ? **P** -- Pulse dialing. Also known as rotary dialing, this dial modifier follows the D command and precedes the telephone number to tell the modem to dial the number using pulse service.
- ? **T** -- Tone dialing. This modifier selects the tone method of dialing using DTMF tones. **Note:** *Tone and pulse dialing can also be combined in a dial command line when both dialing methods are required.*
- ? **;** -- Resume command mode after dialing. If you need to dial a number that is too long to be contained in the command buffer (45 characters for the D command), use the (;) modifier to separate the dial string into multiple dial commands. All but the last command must be end with the ; modifier.
- ? **,** -- Pause While Dialing. The comma (,) dial modifier causes the modem to pause while dialing. The modem will pause the number of seconds specified in S-Register S8 and then continue dialing. If a pause time longer than the value in S-Register S8, it can be increased by either inserting more than one (,) in the dial command line or changing the value of S-Register S8. In the following example, the command accesses the outside (public) telephone line with the 9

dial modifier. Because the comma (,) dial modifier is present, the modem delays before dialing the telephone number 5551212. **Ex:** *ATD 9, 5551212 [Enter]*

- ? **!** -- Using the Hook Flash. The exclamation mark (!) dial modifier causes the modem to go on-hook (hang up) for one-half second and is equivalent to holding down the switch-hook on your telephone for one-half second. This feature is useful when transferring calls.
- ? **W** -- Wait for a Subsequent Dial Tone. The W dial modifier causes a modem to wait for an additional dial tone before dialing the numbers that follow the W. The length of time the modem waits depends on the value in S-Register S7. The modem can be instructed to dial through PBXs (Private Branch Exchanges) or long-distance calling services that require delays during dialing. This can be done with the W command to wait for a secondary dial tone or with a comma (,) command to pause for a fixed time and then dial. **Ex:** *ATDT 9 W 1 2155551212 [Enter]*

### **+++ (Escape Sequence)**

The escape sequence causes the modem to go to the off-line command state from the on-line data state. After this escape sequence, the modem can accept user's AT commands. The escape sequence consists of three escape code that is defined by S-Register 2 (default value: decimal 43(+)).

Do not enter any character before and/or after the "+++" for a guard time specified by S-Register 12 (default: 1 second). The duration between escape codes must also be within the guard time. After the modem recognizes a valid escape sequence, an "OK" result code is returned. If an escape sequence is valid, the escape code is transmitted to a remote modem. The ATO command is used to go back to on-line data state.

For example:

```
ATD 0123456 [enter]
CONNECT 19200
[data] [----]
( 1 sec pause )
+++ (Without 1 sec pause between escape codes)
( 1 sec pause )
OK (On-line command state)
ATH0 [CR] (Disconnect the line)
OK
```

### **A/ (Re-execute Command)**

This command re-executes the previous command processed by the modem. This command will be useful to re-dial without entering a dial string when a line is busy or unanswered. This command is not preceded by "AT", or followed by [Enter].

### **In (Identification)**

This command instructs the modem to return its product identification information.

- ? **I0** -- Returns the product code.
- ? **I1** -- Reports the 3 digits pre-computed ROM checksum code.
- ? **I2** -- Calculates a checksum of the modem firmware ROM and indicates OK or ERROR for the checksum validity.
- ? **I3** --Returns the modem ROM version.

- ? I4 -- TBD
- ? I5 -- TBD
- ? I6 -- Returns the modem data pump model.

### **Zn (Modem Reset)**

This command resets the modem and recalls the stored configuration as defined at power on time.

- ? Z0 -- Reset and recall stored user profile 0.
- ? Z1 -- Reset and recall stored user profile 1.

### **&Fn (Recall Factory Profile)**

This command reloads the factory default profile.

- ? &F0 -- Recall Factory Profile 0. Factory Profile 0 contains the default values from the modem chipset supplier.
- ? &F1 -- Recall Factory Profile 1. Factory Profile 1 contains the default values defined by the product manufacturer.

### **&Jn (Telephone Jack Control)**

This command is only included for compatibility and performs no function. The value is written into S-Register 21.

### **&V (View Configuration)**

This command displays the current active configuration, stored user profiles, and the first four stored telephone numbers. Applications may change these profile.

If the modem's non-volatile memory is detected as defective by the modem's NVRAM test, the modem will display *NVRAM FAILED OR NOT INSTALLED*

### **&Wn (Store User Profile)**

This command stores the current, active configuration including S-Registers into non-volatile memory as stored user's profile 0 or 1. Storable parameters can be viewed by &V command. Stored parameters can be recalled into active configuration by Zn command or at power on.

- ? &W0 -- Store active configuration as user's profile 0.
- ? &W1 -- Store active configuration as user's profile 1.

### **&Yn (Default User Profile)**

This command selects which of two user's profiles will be loaded into the active configuration following Power on Reset.

- ? &Y0 -- Selects power up configuration as user's profile 0.
- ? &Y1 -- Selects power up configuration as user's profile 1.

### **&Zn=x (Store Phone Number)**

This command stores up to 4 telephone number dial strings into one of 4 non-volatile memory locations specified by n. This stored phone number can be used for later abridged dialing with the DS=n command.

n: Entry number (range 0-3)

x: dial string less than 45 digits (including dial modifiers)