



# *Telebit T3000*

*Fast Start Guide*

90202-01 Rev. A



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# PREFACE

This guide is provided to help you quickly install and configure the T3000 modem. If you carefully follow the instructions in this booklet, you may not need to refer to the T3000 Reference Manual unless you have special requirements or need more specific instructions. However, we recommend that you spend some time reviewing that manual for additional information that is not covered in this guide.

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## Installation

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### Equipment Checklist

Before installing the modem, make sure that you have the following equipment:

- An AC power cord and transformer provided with your modem.
- The 7-foot telephone cable supplied with your modem.
- A shielded RS-232D cable with a DB-25 male connector for the modem. Your computer dealer can assist you in obtaining the appropriate cable for your requirements.
- A small flat-blade screwdriver.

If you do not have the items listed above, obtain them before proceeding.

### Connecting the Modem

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If you will be using the T3000 modem with a minicomputer or mainframe, you may need to first connect it to a terminal (or personal computer with a terminal emulation program) to preconfigure the modem before installing it in its final position.

Make sure that the power switch (I/O) on the rear of the modem is turned off (O). Connect the power cord provided with your modem to the POWER connector on the back of the modem.

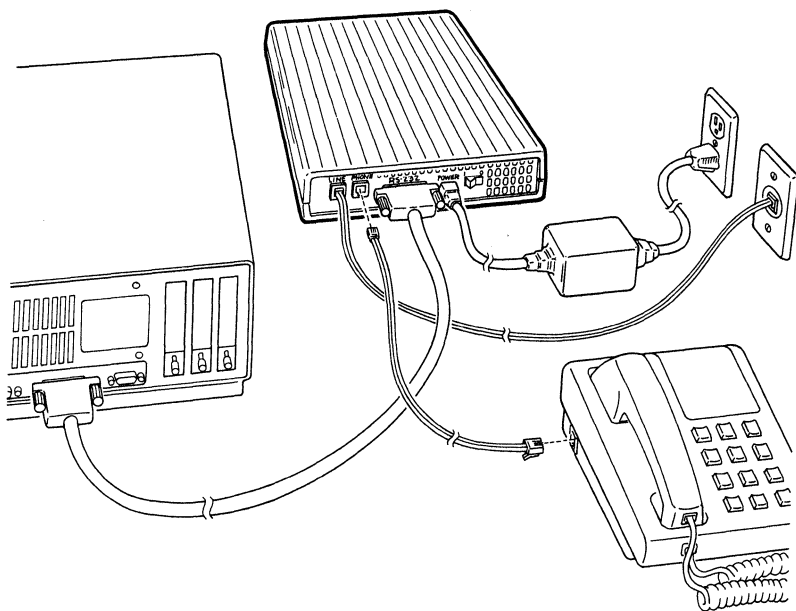
The beveled edge of the plug should be facing up so that it mates with the retainer clip on the connector. Plug the other end of the AC power cord into a grounded AC wall outlet. Refer to Figure 1.

Attach a standard (straight-through) shielded RS-232D modem cable between the RS-232D connectors on the modem and your computer or terminal. Your equipment dealer can help you obtain the correct cable for your specific requirements.

If you have special cabling requirements, refer to Appendix B, Interface Description, in your *T3000 Reference Manual*.

Connect the telephone cable provided with your modem to the wall jack and to the TO LINE connector on your modem.

Optionally, connect your telephone to the TO PHONE connector. This allows you to use the telephone for normal voice calls when the modem is not in use. You also can dial a number using the telephone then switch to data communications mode by pressing the T/D (Talk/Data) switch on the modem.



**Figure 1. T3000 Cable Connection**

## Installation Verification Tests

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Turn on the modem by pressing the power switch located on the back panel. The MR (Modem Ready) indicator lights after one or two seconds, indicating that the modem has completed a series of self-diagnostic tests and is ready to use.

### **T/D (Talk/Data) Switch**

Next, press the T/D switch on the front of the modem. The T/D switch controls the modem's connection to the telephone line much like the hook switch on your telephone. You should hear a dial tone from the modem's speaker. Press the T/D switch again to put the modem back on-hook.

If you do not hear the dial tone, you may have the TO LINE and TO PHONE connections reversed. If this is the case, reconnect the lines properly and restart the verification tests. If you have a telephone connected to the modem, lift the receiver on your telephone and listen for a dial tone. Press the T/D switch. The dial tone from the receiver should go away when the modem goes off-hook (OH indicator is lit). Press the T/D switch again to put the modem back on-hook (OH indicator is off). The dial tone from the telephone receiver should return.

## Prestored Configuration Selection

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The T3000 modem includes fifteen convenient, pre-stored configurations. The pre-stored configurations contain the operating parameters most commonly used for data communications. They are stored in the T3000's permanent memory.

Before using your T3000 modem, determine which configuration best matches your application.

The T3000 pre-stored configurations are as follows:

- **TTY (factory default)**

Used with most asynchronous terminals or PCs emulating asynchronous terminal operation.

- **Unattended Answer Mode**

Used with most asynchronous Front End Processor (FEP) host ports operating at a fixed interface speed of 9600 bps.

- **Intelligent Answer Mode**

Used with most computers running intelligent software that interprets the modem result codes and adjusts the interface speed accordingly. Modem result codes are sent to the computer. The modem interface speed follows the connect speed.

- **System V (HDB) UUCP**

Used with most HoneyDanBer UUCP UNIX systems. (You must have /usr/lib/uucp/Systems, Devices, and Dialers files).



For additional information when configuring the modem for UUCP protocol support, use your hardware and software configuration guides for your UNIX operating system, or refer to the Nutshell handbook entitled *Managing UUCP and Usenet*, published by O'Reilly and Associates, Inc.

For specific configuration guides, call your Technical Support representative at 408-734-5200.

- **Ver 2 (BSD) UUCP 4.2-4-3 and SCO Xenix**

Used with most Version 2 UUCP systems. (You must have /usr/lib/uucp/L.sys and L-devices files.)

For additional information when configuring the modem for UUCP protocol support, use your hardware and software configuration guides for your UNIX operating system, or refer to the Nutshell handbook entitled *Managing UUCP and Usenet*, published by O'Reilly and Associates, Inc.

For specific configuration guides, call your Technical Support representative at 408-734-5200.

- **Transparent Synchronous**

Used with most 14,400 bps synchronous terminals or devices. Operates in V.32bis transparent synchronous full-duplex mode at 14,400 bps, using the DCE's clock.

- **IBM PC/MAC with SW Flow Control (XON/XOFF)**

Used with most PC software packages that support software (XON/XOFF) flow control.

- **IBM PC/MAC with HW Flow Control (RTS/CTS)**

Used with most software packages that support hardware (RTS/CTS) flow control.

**Note:** In order to use RTS/CTS control on a Macintosh, the communications software must support the feature, and a special cable must be used as recommended in the software documentation.

- **Leased Line—Asynchronous Originate Mode**

Used in any asynchronous point-to-point, 2-wire leased-line V.3bis application. The modem connects automatically on a leased line to another T3000 modem that is configured with the &F10 command in asynchronous V.32bis mode at 14,400 bps.

- **Leased Line—Asynchronous Answer Mode**

Used in any asynchronous point-to-point, 2-wire leased-line V.32bis application. The modem connects automatically on a leased line to another T3000 modem that is configured with the &F11 command in asynchronous V.32bis mode at 14,400 bps.

- **Leased Line—Synchronous Originate Mode**

Used in any synchronous point-to-point, 2-wire leased-line V.32bis application. The modem connects automatically on a leased line to another T3000 modem that is configured with the &F12 command in synchronous V.32bis mode at 14,400 bps.

- **Leased Line—Synchronous Answer Mode**

Used in any synchronous point-to-point, 2-wire leased-line V.32bis application. The modem connects automatically on a leased line to another T3000 modem that is configured with the &F13 command in synchronous V.32bis mode at 14,400 bps.

Each prestored configuration of the T3000 modem can be selected easily via the T/D switch. The front panel indicators provide a visual display of the configuration selected.

The following configurations are available by entering an &F command, but not by using the front panel indicators. Consult your *T3000 Reference Manual* for details.

- **Asynchronous/Synchronous**

When the modem is not on-line, the primary data and clock line operate in asynchronous mode. However, the modem switches to synchronous mode when a connection to another modem is established.

- **HP 3000 (host)**

Used with an HP 3000 host system using ENQ/ACK flow control.

- **HP 3000 (terminal)**

Used with an HP terminal using ENQ/ACK flow control, which calls an HP 3000 host system that uses the same flow control.

You can store your preferred configurations in one of two memory locations, A or B. The modem loads the default configurations into nonvolatile memory.

To set a default configuration using the front panel indicators, follow the steps below.

1. Turn off the modem power and select the configuration you wish to set as a default.
2. To store the configuration as Configuration A, set the A/B switch to position A. To store the configuration as Configuration B, set the A/B switch to position B.
3. Enter the configuration select mode by holding down the T/D switch while turning on the power. Release the T/D switch when the CD and MR indicators flash.
4. View the configurations by pressing the T/D switch for less than two seconds. The front panel indicators cycle through the various configurations shown in Table 1.

**Table 1. Prestored Configurations**

| Prestored Configuration                       | Front Panel LED |    |    |    |    | AT&F Command |
|---|-----------------|----|----|----|----|--------------|
|   | MR              | OH | CD | HS | EC |              |
| TTY (factory default)                         | ●               | ●  | ●  | ●  | ●  | &F or&F0     |
| Unattended Answer Mode                        | ●               |    |    |    |    | &F1          |
| Intelligent Answer Mode                       |                 | ●  |    |    |    | &F2          |
| System V (HDB) (UUCP)                         | ●               | ●  |    |    |    | &F3          |
| Ver 2 (BSD) (UUCP)<br>4.2–4.3 and SCO Xenix   |                 |    | ●  |    |    | &F4          |
| Transparent Sync                              | ●               |    | ●  |    |    | &F5          |
| IBM PC/MAC with SW<br>flow control (XON/XOFF) |                 |    |    | ●  |    | &F8          |
| IBM PC/MAC with HW<br>flow control (RTS/CTS)  | ●               |    |    | ●  |    | &F9          |
| Leased Line<br>Async Originate Mode           |                 | ●  |    | ●  |    | &F10         |
| Leased Line<br>Async Answer Mode              | ●               | ●  |    | ●  |    | &F11         |
| Leased Line<br>Sync Originate Mode            |                 |    | ●  | ●  |    | &F12         |
| Leased Line<br>Sync Answer Mode               | ●               |    | ●  | ●  |    | &F13         |

When the indicators correspond to the desired configuration, make your selection by holding down the T/D switch for more than two seconds.

When the modem accepts your choice, the indicators corresponding to the selected configuration flash. The proper configuration is now stored in the memory location, A or B, as selected in Step 1.

Release the T/D switch when the indicators flash. The modem also loads the prestored settings into its current operating parameters except that auto-answer is always enabled. If, however, you turn the modem power off then on, auto-answer is no longer enabled.

After you set a prestored configuration, the modem turns off the LEDs. When the modem is ready and configured to the selected default configuration, the MR LED light goes on.

## **A/B Switch Operation**

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The A/B switch is used to select one of two possible modem configurations. When you turn on the modem, the modem loads either Configuration A or B into active memory depending on the setting of the A/B switch. Changing the position of the switch resets the modem and loads the new configuration into active memory.

You can change either configuration by saving the current operating parameters to nonvolatile memory using the AT command &W. The modem is shipped from the factory with both Configurations A and B set for asynchronous operation.

You can modify the current operating parameters and save them in nonvolatile memory as Configuration A or Configuration B via the AT&W command. Pressing the A/B switch resets the modem and loads the new configuration into the active configuration. When you select a new configuration, its settings replace the current operating parameters.

## **Establishing a Connection**

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### **Using the Dial Command**

To call another modem using tone dialing, enter AT DT followed by the telephone number to be called. For example:

```
AT DT 555-6789
```

The next example shows you how to have the modem dial through a PBX using pulse dialing (DP9), wait for an outside line (W), dial a long distance telephone number, wait for 8 seconds (,,,) then switch to tone dialing (T) to charge the call to a telephone credit card:

```
AT DP9 W 0-408-555-6789,,,T123-456-7890-1234
```

### **Using the T/D Switch**

To dial a call manually (using the telephone) dial a call using the telephone and press the T/D switch as soon as the remote modem's answering tones are audible. The modem then goes off-hook (OH LED is ON) and takes control of the telephone line.

**Note:** The T3000 may attempt to connect in either originate or answer mode depending on the current setting of the S100 register. Consult the *T3000 Reference Manual* for more details.

If you set the S104 register to 3, pressing the T/D switch automatically dials the first or second number in the Number Directory, depending on the current setting of the A/B switch. When the A/B switch is in the A position, the modem dials the first number in the number directory; if the switch is in the B position, the modem dials the second number. See the *T3000 Reference Manual* for more information.

## Using the Auto Answer Feature

The modem automatically answers an incoming call after a preset number of rings, and usually sends a carrier signal to the remote modem. If no originate signal is detected within a specified period of time, or if any character is sent from your equipment before the modems have established a communication link, the modem sends a NO CARRIER result code to the DTE computer or terminal.

If a carrier is detected, the modem sends a CONNECT XXXX result code indicating the transmission speed of the connection or the DTE interface speed, depending on the X command setting.

## Terminating a Connection

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To terminate a connection, disconnect through your communications software. Also, you can disconnect a call by pressing the T/D switch on the front panel of the modem.



If you will be dialing through a PBX or have other special dialing requirements, refer to your *T3000 Reference Manual* for additional information on dialing.



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