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# Running Telecom/TT-Link and Trafman under Windows 7 (and up) using DOSbox

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*3/31/2014*

Documentation written for:

**Telecom/TT-Link** V3.97 or later.

**TrafMan** V6.43 or later.

**DOSbox** V0.74 or later.

**COM/IP** V4.9.5 or later.

## I. Introduction and Initial Emulator Setup

Microsoft discontinued support for MS-DOS level programs starting with Windows 7. This has made the operation of Telecom/TT-Link and TrafMan on systems with a Windows 7 or later operating systems problematical, to say the least. However, it is possible to achieve functionality (with some limits) even on a Windows 7 computer by using what is known as a “DOS Emulator”.

Emulators simulate the conditions of an earlier operating system on a later one. For example, one of the most common emulators is called DOSbox (<http://sourceforge.net/projects/dosbox/>) and it is available as a free download for both PC and Mac computers. DOSbox creates an artificial MS-DOS level environment on a Windows 7 computer. Inside this environment you can run most DOS programs, including TrafMan and Telecom/TT-Link.

This document describes how to utilize the DOSbox emulator for running Telecom/TT-Link and TrafMan. It should be noted, however, that other emulators may also work and this document can serve as a guide for setting up and using similar DOS emulators as they are available.

### *Initial DOSbox Emulator Setup:*

- 1) Download the latest release of DOSbox (0.74 or later) to your PC and install it.
- 2) Create a new root level directory on your computer named “C:\DOSbox”.
- 3) Move or copy the entire TrafMan directory (usually C:\TRAFMAN or C:\TRAF60) to the new C:\DOSbox directory. This should result in the entire TrafMan program existing in C:\DOSbox\TRAF60 or C:\DOSbox\TRAFMAN.
- 4) Do the same for the Telecom/TT-Link directory (usually C:\TELECOM or C:\TTLINK). Like TrafMan, this should result in a complete copy of Telecom/TT-Link existing in C:\DOSbox\TELECOM or C:\DOSBox\TT-LINK.
- 5) You now need to create a custom configuration file for DOSbox as follows:

- a. Find the default configuration file. It is normally located at:

`C:\Users\AppData\Local\[User Name]\AppData\Local\DOSBox\dosbox-0.74.conf`

Where [User Name] is your windows login name. For example, if your Windows login in name is “Rebecca”, you will find the file at:

`C:\Users\AppData\Local\Rebecca\AppData\Local\DOSBox\dosbox-0.74.conf`

NOTE: The “AppData” subdirectory is usually hidden on many machines. However, you can still go to it if you type the address directly into the explorer directory bar.

- b. Copy the `dosbox-0.74.conf` file to C:\DOSbox and then rename it `dosbox.conf`.
- c. Use any standard text editor to open up `dosbox.conf` for editing.
- d. Make the following changes:

- i. If a full screen display is desired, change: `fullscreen=true`

- ii. Find the [autoexec] section and add these lines to the end:

`mount C C:\DOSbox`

`C:`

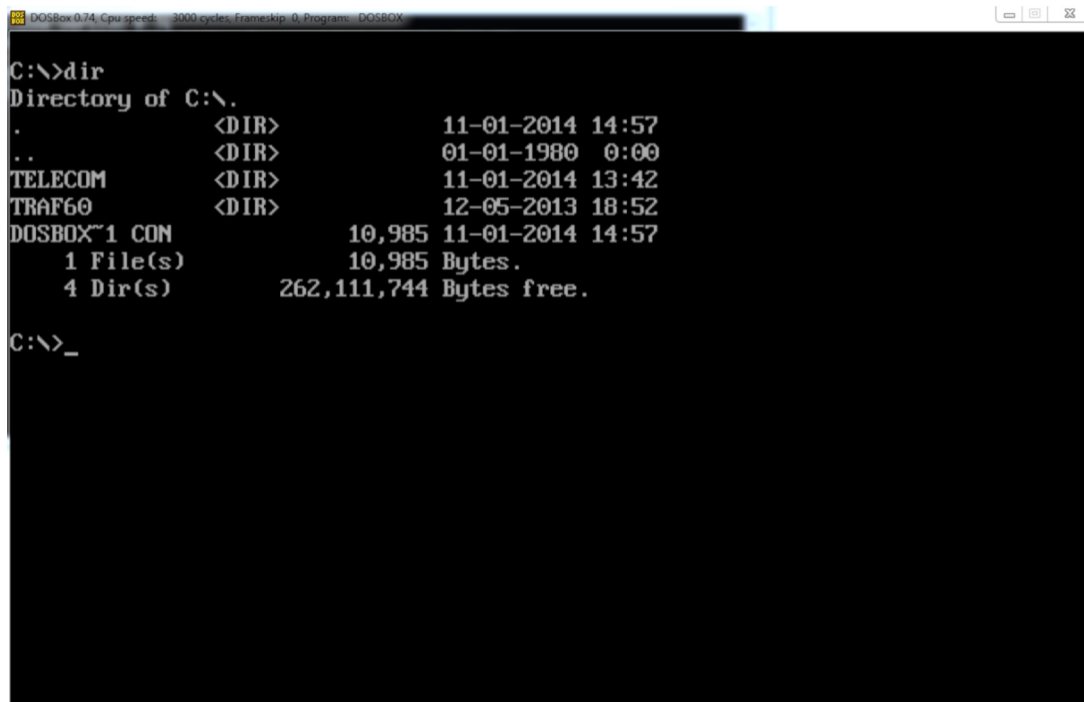
`CLS`

`VER SET 3 0`

(NOTE: There is a space between the ending 3 and the 0)

- iii. OPTIONAL: The screen is often small on hi-res monitors. To increase the size of the DOSbox window, change `output=overlay` and change the window resolution line to something like `windowresolution=1024x768`. Other settings related to the display may also improve the screen visibility (see the DOSBox manual for more information).

- e. Save `dosbox.conf`.
- 6) Next create a new shortcut that runs DOSbox with all of the parameters you setup in the step #5:
- a. Find the “DOSbox.exe” program in the “C:\Program Files (x86)\DOSBox-0.74” directory, right click on it, and select **Copy**.
  - b. Move your cursor to your desktop, right click, and select **Paste Shortcut**.
  - c. Right click on the new shortcut and select **Properties**.
  - d. On the **Shortcut** tab, add to the end of the Target line: `-conf C:\DOSbox\dosbox.conf`
  - e. On the Compatibility tab, check the box “Run this program in compatibility mode for” and select “Windows XP (Service Pack 2)”.
  - f. Close the **Properties** box.
- 7) Test out your setup by double clicking the DOSbox.exe desktop shortcut. It should open a DOS window with the standard “C:\” prompt. Enter the command “DIR” and you should see something like this:



```
DOSBox 0.74 Cpu speed: 2000 cycles/framekip 0 Program: DOSBOX
C:\>dir
Directory of C:\.
.                <DIR>                11-01-2014  14:57
..               <DIR>                01-01-1980   0:00
TELECOM          <DIR>                11-01-2014  13:42
TRAF60           <DIR>                12-05-2013  18:52
DOSBOX~1 CON     10,985 11-01-2014  14:57
    1 File(s)      10,985 Bytes.
    4 Dir(s)      262,111,744 Bytes free.

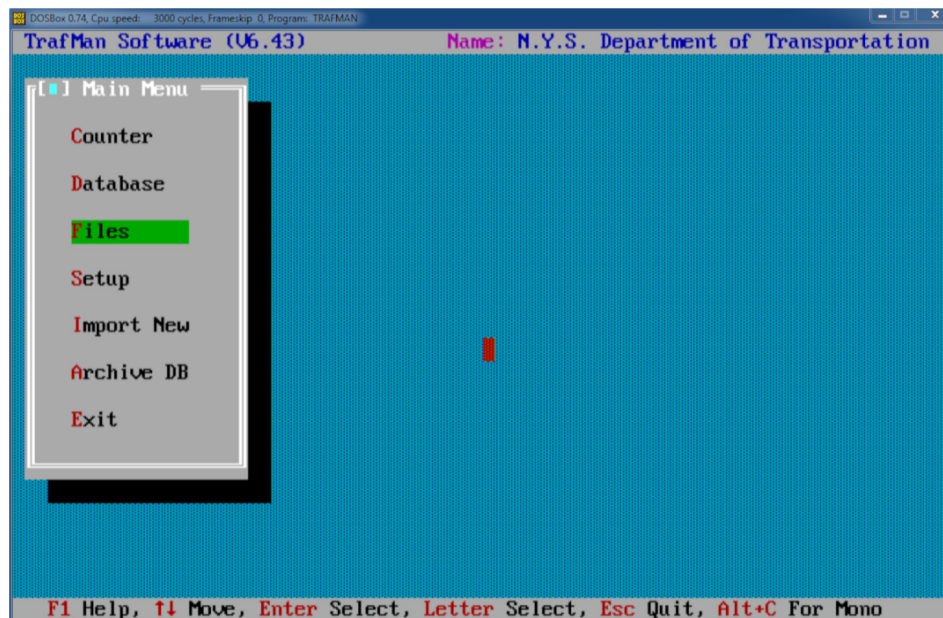
C:\>_
```

## II. TrafMan

TrafMan running under DOSbox works very well without any known issues as of this document's date. To set it up, follow these steps:

- 1) Right click on the "DOSbox.exe" shortcut you created in the introduction and choose **Copy**.
- 2) Select somewhere else on your desktop, right click, and select **Paste**.
- 3) Right click the new shortcut and select **Rename**. Type in "TrafMan" for the name.
- 4) Right click the now named TrafMan shortcut and select **Properties**.
- 5) Click the **Shortcut** tab and add to the end of the Target line (after the `-conf C:\DOSbox\dosbox.conf`) the following:  
`-c "CD \TRAF60" -c "TRAFMAN -NOHELP" -c "EXIT"`  
Or, if TrafMan is installed in the \TRAFMAN directory, then add:  
`-c "CD \TRAFMAN" -c "TRAFMAN -NOHELP" -c "EXIT"`
- 6) Close the **Properties** box.

At this point you can test out your TrafMan installation. Double click the TrafMan shortcut on the desktop to open the program. It should appear something like this:



The next and final step towards using TrafMan is to enable the specific COM ports you want to use with the program. To do this, follow these steps:

- 1) Close TrafMan (and any other DOSbox window).
- 2) Open the DOSbox configuration file at "C:\DOSbox\dosbox.conf" for editing.
- 3) Find the [serial] port section of the configuration file. DOS programs only support serial ports numbered COM1 through COM4, labeled in the [serial] section as serial1, serial2, serial3, and serial4. DOSbox allows you to map any numbered serial port on your PC to a specific DOS emulated COM port.

If your computer has a built in serial port or has a USB to Serial port adapter providing a specific COM port, change the specific port line from "disabled" or "dummy" to:

```
serial1=directserial realport:COMx
```

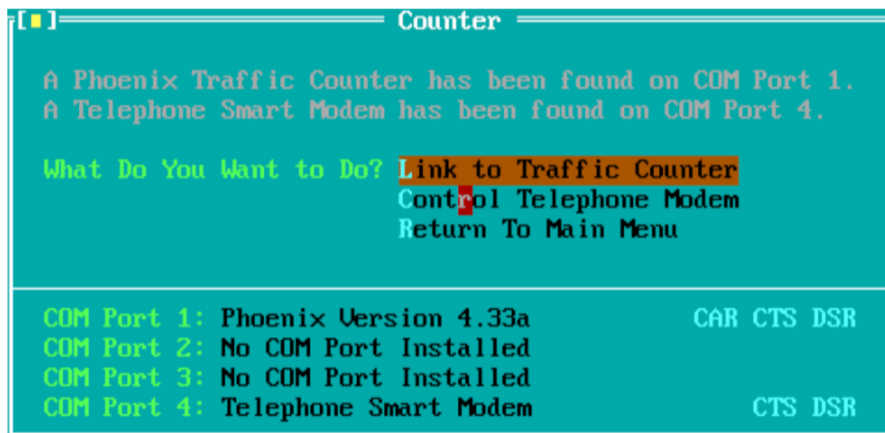
Where "x" in the above line is the actual COM port number on the computer (such as COM1).

As an example, a `dosbox.conf` file for a computer that has a built in COM1 port and a USB to Serial COM4 port, you can connect these to the same named DOS ports (COM1 and COM4) like this:

```
[serial]
# serial1: set type of device connected to com port.
#           Can be disabled, dummy, modem, nullmodem, directserial.
#           Additional parameters must be in the same line in the form of
#           parameter:value. Parameter for all types is irq (optional).
#           for directserial: realport (required), rxdelay (optional).
#                               (realport:COM1 realport:ttyS0).
#           for modem: listenport (optional).
#           for nullmodem: server, rxdelay, txdelay, telnet, usedtr,
#                               transparent, port, inhsocket (all optional).
#           Example: serial1=modem listenport:5000
#           Possible values: dummy,disabled,modem,nullmodem,directserial.
# serial2: see serial1
# serial3: see serial1
# serial4: see serial1

serial1=directserial realport:COM1
serial2=disabled
serial3=disabled
serial4=directserial realport:COM4
```

- 4) Save the `dosbox.conf` file.
- 5) Run TrafMan (by double clicking the desktop shortcut).
- 6) Select **Setup -> Counter Options -> COM Port Options**.
- 7) At the bottom, adjust the COM port enables to only “Check” those ports you set in the configuration file as `directserial`.
- 8) Exit setup and select the **Counter** option. You should see something similar to this:



- 9) Select Link to Traffic Counter to talk to the connected device.

### III. Telecom/TT-Link

Telecom/TT-Link is designed to call up remote sites and then monitor and/or download data from them. Like TrafMan, it works by connecting to the emulated ports setup in the `dosbox.conf` file. To setup a Telecom/TT-Link desktop shortcut, follow these steps:

- 1) Right click on the “DOSbox.exe” shortcut you created in the introduction and choose **Copy**.
- 2) Select somewhere else on your desktop, right click, and select **Paste**.
- 3) Right click the new shortcut and select **Rename**. Type in “Telecom” or “TT-Link” for the name.
- 4) Right click the now named Telecom/TT-Link shortcut and select **Properties**.
- 5) Click the **Shortcut** tab and add to the end of the Target line (after the `-conf C:\DOSbox\dosbox.conf`) the following (for Telecom, substitute TT-Link if using that program):  

```
-c "CD \TELECOM" -c "TELECOM -PORT=wxyz" -c "EXIT"
```

Where wxyz are the valid COM port numbers (1-4) that you plan to use with the program. For example, if you intend to use COM1 and COM4, you would enter:  

```
-c "CD \TELECOM" -c "TELECOM -PORT=14" -c "EXIT"
```
- 6) Close the **Properties** box.

If you have followed the steps in section II. **TrafMan** on setting up COM ports for use with the software (and there are no new ports you want to configure), you can skip the next section. Otherwise, follow these steps to enable COM ports for the Telecom/TT-Link program:

- 1) Close Telecom/TT-Link (and any other DOSbox window).
- 2) Open the DOSbox configuration file at “C:\DOSbox\dosbox.conf” for editing.
- 3) Find the `[serial]` port section of the configuration file. DOS programs only support serial ports numbered COM1 through COM4, labeled in the `[serial]` section as serial1, serial2, serial3, and serial4. DOSbox allows you to map any numbered serial port on your PC to a specific DOS emulated COM port.

If your computer has a built in serial port or has a USB to Serial port adapter providing a specific COM port, change the specific port line from “disabled” or “dummy” to:

```
serial1=directserial realport:COMx
```

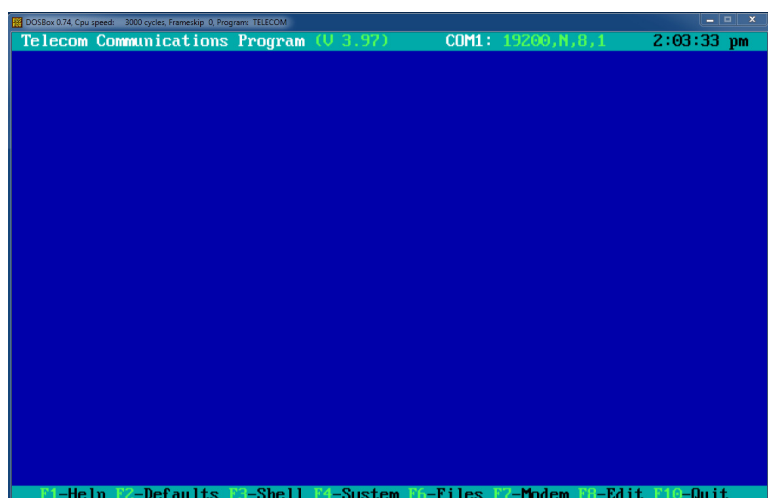
Where “x” in the above line is the actual COM port number on the computer (such as COM1).

See section II. **TrafMan** for a setup example of a `dosbox.conf` file for a computer that has a built in COM1 port and a USB to Serial COM4 port.

- 4) Save the `dosbox.conf` file.

At this point you can test out your Telecom/TT-Link installation. Double click the Telecom/TT-Link shortcut on the desktop to open the program.

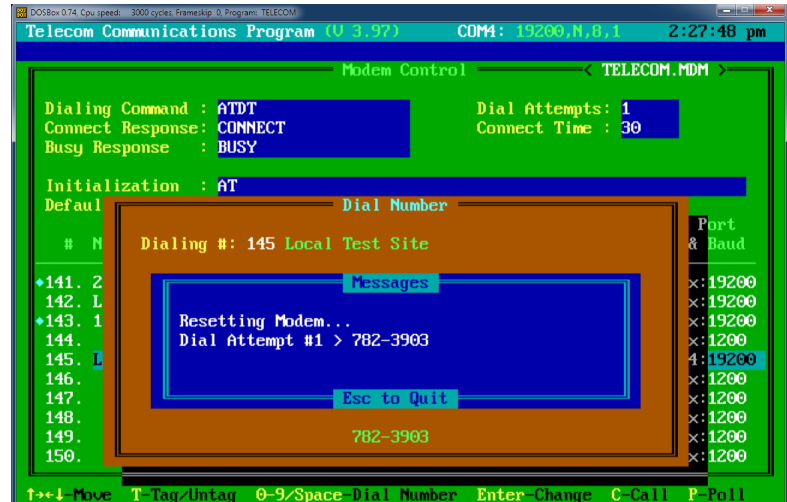
It should appear something like this:



### III.a. Using Telecom/TT-Link under DOSbox to direct call a site:

Telecom/TT-Link works normally when running under DOSbox to call a site. The basic procedure is as follows:

- 1) Press <F7> to call up the directory window.
- 2) Select a directory entry and press <Enter> to edit.
- 3) Fill out the relevant data (name, phone number, baud rate, modem COM port, etc).
- 4) When the cursor is on the site, press <Space> to call it.



- 5) When the call completes, the program will either auto-run TrafMan (if selected) or go back to the main screen. At that point, press <F9> to run TrafMan to talk to the counter.



### *III.b. Using Telecom/TT-Link under DOSbox to call a SOIP site with the COM/IP program:*

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It is very common for Traffic Counter sites to be connected by SOIP (serial over internet protocol). There are a variety of methods and hardware to accomplish this, and one of the common ways of doing this is to use a program by Tactical Software called COM/IP (<http://www.tacticalsoftware.com/virtual-modem-redirector/com-ip.htm>).

COM/IP can create a “virtual” COM port which acts basically like a modem. This port supports standard “AT” commands such as “ATDT” to call a remote site with the phone number the TCP/IP address and port number.

To setup COM/IP to work with Telecom/TT-Link under DOSbox, follow these steps:

- 1) Download a purchased copy of COM/IP from the Tactical Software website .
- 2) Install COM/IP.
- 3) When the “Please select virtual COM ports” window appears, check a box for one COM port that you will use with Telecom/TT-Link.
- 4) Add a “Modem Driver” to the COM port you enabled. Follow the instructions given in the software for installing a “COM-IP Virtual Modem”, and install it just to the COM port you have created for this purpose.

*Update dosbox.conf to use new virtual COM port modem:*

- 5) Close Telecom/TT-Link, TrafMan, and any other DOSbox window.
- 6) Open the DOSbox configuration file at “C:\DOSbox\dosbox.conf” for editing.
- 7) Find the [serial] port section of the configuration file. Modify one of the unused serial ports (serial1, serial2, serial3, or serial4) to say =directserial realport:COMx. Where “x” is the COM port number you setup in step #3 above.  
For example, if you wanted to tie your virtual COM2 port to a DOSbox simulated COM2 port, you would change the configuration file to read:

```
serial2=directserial realport:COM2
```

- 8) Save the dosbox.conf file.

*Modify the Telecom/TT-Link shortcut to have the new port:*

- 9) Right click the Telecom/TT-Link shortcut and select **Properties**.
- 10) Click the **Shortcut** tab and modify the end of the Target line -Port= section to include the new virtual modem port. For example, if already had COM ports 1 and 4, and you just added new COM2 as the virtual modem, you would go from (for Telecom):

```
-c "CD \TELECOM" -c "TELECOM -PORT=14" -c "EXIT"
```

To this:

```
-c "CD \TELECOM" -c "TELECOM -PORT=124" -c "EXIT"
```

- 11) Close the **Properties** box.

That completes the basic Telecom/TT-Link setup. To use your new virtual modem, follow these steps:

- 1) Run the Telemetry program with your new setup.
- 2) Press <F7> to open up the dialing directory.



- 3) Make sure that the **Initialization** line is set to either (a) to use an &D0 to prevent hanging up of the link after a connection, or (b) simply be only the text string “AT” so that Telecom/TT-Link does not override any of the default COM/IP settings that are needed to make the system work.
- 4) Create and/or edit a directory entry to use the SOIP connection. The phone number line should contain all 12 digits of the IP address (without periods) plus a port number (such as “3322”). For example, you might create an entry that appears like this:



- 5) The COM port specifies the Virtual Modem COM port created with COM/IP. The phone number is 12 digits of the IP address plus the port number (in this case “122.344.511.391” with a port number of “3322”). Make sure all IP numbers are three digits (so “79” should be entered as “079”).
- 6) Exit the editing window and press <Space> to dial the site.

That completes the required setup for using Telecom/TT-Link to connect to remote sites using COM/IP plus DOSbox to run on a Windows 7 or later computer system.

### III.c. Telecom/TT-Link Auto-Polling Setup & Options

The following setup and command line options can be used to control auto-polling:

#### - Ax (Autodial Now, Daily, Weekly, or Yearly)

Adding one of the following command line options to Telecom/TT-Link can auto-start the auto-dialer in the following manner:

- AN Autodial immediately all sites.
- AD Autodial using Daily Time.
- AW Autodial using Weekly Calendar.
- AY Autodial using Yearly Calendar.

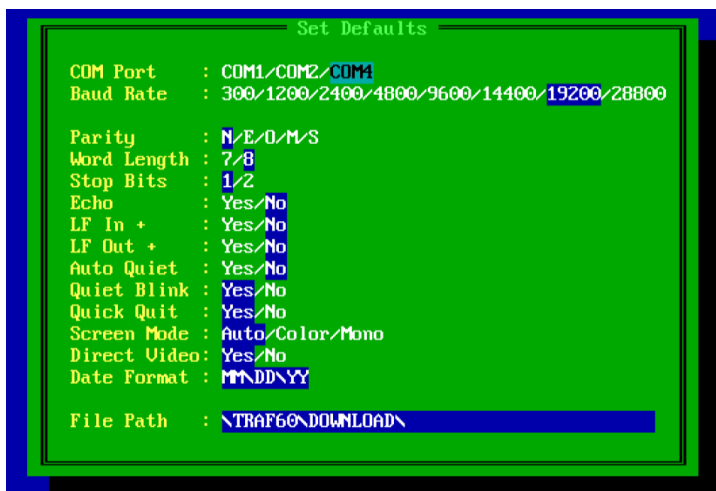
Most users will use the “Daily” mode (which also is started by pressing <F7> from the main screen and then <Alt+D>) causes the system to start auto-polling the sites according to the individual site time settings as shown here:



This site would be called at 05:35am. Note that you can set all sites to the same time (such as 01:00) and the program will go through them in order regardless of the length of time it takes to poll each site. Many users set all sites to the same time and they will be called in order.

#### Download Directory

The directory used for storing all downloaded data files during auto-polling is set in the main **Set Defaults** option dialog. From the main Telecom/TT-Link blue screen, press <F2> to open the default settings and then adjust the bottom value to set the directory for all auto-polling downloads:



The above setting would store all files in the \TRAF60\DOWNLOAD directory. Note that this directory is relative to the DOSbox mounted drive and directory, and may not be the actual directory you find the files in from Windows Explorer.

For example, if Telecom/TT-Link is setup according to these instructions, then:

\TRAF60\DOWNLOAD\

Is actually:

C:\DOSBox\TRAF60\DOWNLOAD\