

# 3780Link for Windows

## AutoSync Version Installation Guide

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## **Technical Support**

Serengeti Systems provides technical support for as long as you use 3780Link at no additional cost to you. Support is available via the Internet from our web site or via e-mail, or by telephone.

- Access to Serengeti Technical Support is available from within the 3780Link GUI by way of your web browser or e-mail (assuming either or both of these are installed on the same PC as 3780Link.) Open the **Help** menu, click **Technical Support**, and follow the links to the Serengeti Web Page Technical Support or to access our support staff via e-mail.
- Visit the Serengeti Web Page (<http://www.serengeti.com>) directly and click on **Technical Support** to access our online technical database. You'll find answers to many of the most commonly asked questions at your fingertips.
- For fast response to your technical support issue, sum up your question or problem in writing and submit this via e-mail to [Support@Serengeti.com](mailto:Support@Serengeti.com). We'll respond to you by e-mail or a telephone call (if appropriate) as quickly as we can.
- If you cannot find the answers you're searching for online or you do not have e-mail access, you may call us at (512) 345-2211 and ask for technical support during our normal business hours of 9AM to 5PM Central Time Monday through Friday.

### **IMPORTANT**

Requests for License Manager authorizations are not accepted by telephone. These requests must be submitted via fax or e-mail. See the section entitled **LICENSE – Serengeti License Manager** for more information.

## 3780Link for Windows

3780Link operates under Microsoft Windows 95, Windows 98, or Windows NT Workstation or Server.

This installation guide applies to the version of 3780Link that uses an AutoSync 2 compatible modem. This guide is designed to step you through the installation process and to describe the key components of 3780Link. You may wish to refer to the “readme.1st” file for more information.

There are two executable versions of 3780Link. One version, referred to as the 3780Link GUI, is intended for you to use interactively for direct control over a communications session. The second version, referred to as 3780Link Script Only, or 3780Link SO for short, is intended for unattended communication sessions controlled by script files(s) or by a separate program that you create. More detailed information on both versions is presented later in this guide and may be found in the [3780Link User's Guide](#).

### **Software Installation**

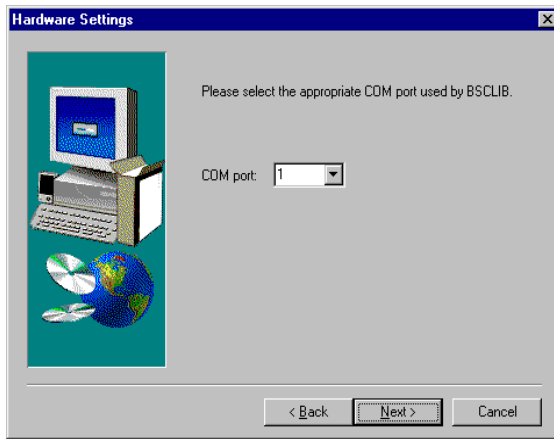
Follow the steps below to install 3780Link for Windows.

- When installing to a Windows NT system, you must have Administrator privileges to install 3780Link.
- Insert the first 3780Link diskette into a diskette drive.
- Click **Add/Remove Programs** from the Control Panel and follow the instructions on the screen.
- Setup displays a welcome dialog and then displays the License Agreement. Read this agreement carefully before continuing.
- Setup asks you for your Name, Company Name, and Serial Number. Enter this information and click **Next**.

## 3780Link for Windows

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- Setup allows you to change the default installation directory and Program Folder for 3780Link. Typically, the default directory of “Program Files\3780Link” and Program Folder “3780Link” are acceptable.
- Choose the COM port used by the AutoSync modem. The installation dialog is shown below.



- Under Windows 95/98, you will need to reboot the machine after the installation before using 3780Link.
- In order to use 3780Link, you must authorize it by running License Manager. There are two types of authorization: First Run Authorization, which may be done immediately to authorize 3780Link for seven days of use and Full Authorization, which fully authorizes 3780Link on the system on which it was installed. The authorization process is described in more detail in the **LICENSE – Serengeti License Manager** section below.

## Software Removal

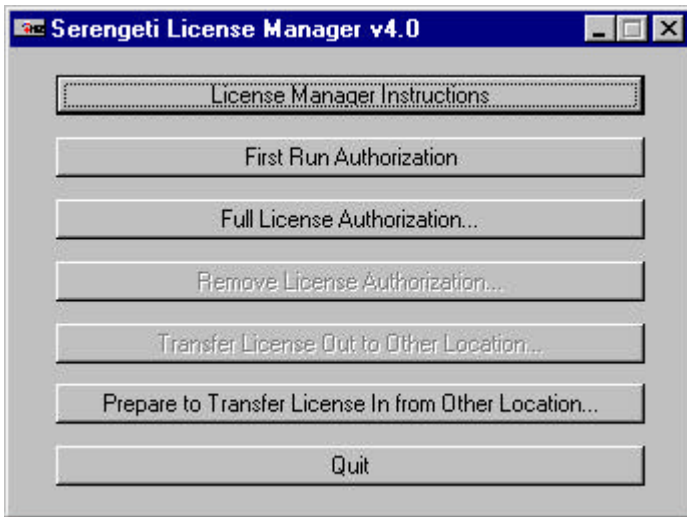
- You must first remove license authorization by running License Manager and clicking the Remove License Authorization button. Information about the removal of the license is written to a file named

“removal.txt” which you will need to refer to if you need to reauthorize 3780Link at a later time.

- To remove the 3780Link software, click on the **Uninstall 3780Link** icon in the 3780Link program folder or click on **Add/Remove Programs** in the Control Panel and follow the instructions on the screen. All programs and files that were originally installed on your machine are removed. Any files residing in the installation directory created after installation are not removed.

## **LICENSE – Serengeti License Manager**

The AutoSync Version of 3780Link utilizes the Serengeti License Manager license control system. 3780Link must be authorized before it can be used. The following sections describe each of the operations License Manager can perform. The main License Manager screen is shown below:



Once 3780Link is installed, the license control system operates transparently “behind the scenes” and you will be unaware of its presence. However, you should be aware that the following operations would result in the loss of license authorization:

- copying 3780Link and running it from another machine
- backing up and restoring 3780Link to a different or repartitioned hard drive

### **License Manager Instructions**

Click this button to display the License Manager Help text file in Notepad. This file is stored on the machine as “LICMHELP.TXT”.

### **First Run Authorization...**

You can immediately authorize 3780Link for seven (7) days by clicking this button of License Manager. The application will run normally for this period of time, permitting you sufficient time to obtain a Site Key in order to fully authorize the application. A First Run Authorization can only be performed once on any given workstation – uninstalling and reinstalling does not result in additional First Run Authorizations.

### **Full License Authorization...**

3780Link must be fully authorized before it can be used beyond the initial seven-day First Run Authorization period. Full authorization is accomplished by providing Serengeti Systems with the License Request Form. To create the form click on **Full Authorization**. Then click on **Create Form**. The following dialog is then displayed:

**Create Authorization Form**

Site Code: 8QD2 T79M DPCT 3JR2

Serial Number: 82001

Contact Name: Wiley Coyote

Company Name: Acme Widgets Incorporated

Email Address: wiley@widgets.com

Fax: (512)480-8729

Create Form Print Form Close Help

Fill out the information requested and then click on **Create Form** to save the form as the file “REGISTER.TXT” or click on **Print Form** to print the form to the default printer. You can send the form to Serengeti Systems via fax or e-mail at:

Fax: (512)480-8729

E-mail: [Register@Serengeti.com](mailto:Register@Serengeti.com)

Authorization is not available via telephone. Serengeti Systems will respond with your Site Key within one business day.

After obtaining your Site Key, you can fully authorize the application by entering your serial number and Site Key in the Full License Authorization dialog and then clicking **Authorize**.

**License Authorization**

Site Code: P980 XwF9 9CJM YM6Z

Site Key: [ ] [ ] [ ] [ ] [ ] [ ]

Authorize Create Form... Close Help

Once authorized, the application may be used without restriction on the workstation on which it was installed.

Once authorized you may find it necessary to use License Manager again to transfer the application's license to a different workstation either via diskette or network connection, or to remove authorization permanently.

### **Remove License Authorization...**

License Manager may be used to completely disable 3780Link by clicking on this button which removes either a first run or full license authorization. During the removal process, License Manager records the product serial number, Removal Code, and new Site Code in a file named "REMOVAL.TXT". Once authorization is removed, 3780Link cannot be run until a fresh Site Key is issued and the license is completely re-authorized. (First Run Authorization cannot be reused.)

To obtain a new Site Key, follow the steps given in the Full License Authorization section above. When reauthorizing a license that has been removed, it is necessary to provide us with the Removal Code.

### **Prepare to Transfer License In from Other Location... Transfer License Out to Other Location...**

Should it become necessary to relocate the application to a completely different location, the license may be transferred via diskette or network connection using License Manager. Such a transfer is a multi-step process. To perform a license transfer, follow these steps:

1. Install the product on the target machine. Then, run License Manager and click the **Prepare to Transfer License In from Other Location...** button. This involves choosing a directory that will be used to transfer the necessary licensing files from the source machine to the target machine. You may use a network directory that is accessible to both machines, or instead, you may use a floppy disk that you move from one machine to the other when needed.
2. Click the **Transfer License Out to Other Location...** button on the source machine. Here, you will indicate the directory that you used in



the previous step. If you are using a floppy, you must move the floppy from the target machine to the source machine.

3. Now finish the transfer process on the target machine. If you are using a floppy, you must first move the floppy from the source machine back to the target machine.

## **Running 3780Link GUI for the First Time**

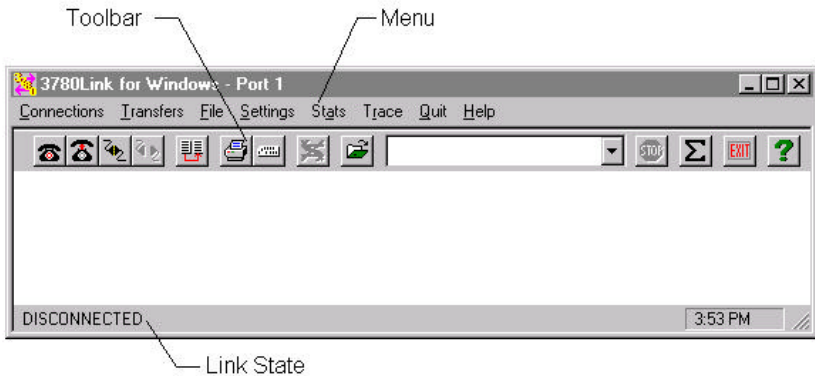
The first time that you run 3780Link GUI, you must configure the modem type to match the type of modem you will be using. 3780Link GUI will automatically display the “Modify Hardware Settings” window so that you may select the modem type. In addition, it may be necessary for you to modify the Link Settings, Terminal Settings, and Transfer Settings to match the requirements of the remote system(s) to which you will be connecting. After the configuration settings have been saved, you are ready to begin a communications session.

A communications session may be started in one of the following ways:

1. Use the 3780Link GUI menus to interactively issue commands such as Auto Dial, Send File, and Disconnect.
2. Run a script file that automates the entire communications session. A script file can be run either through the Transfers | Run Script menu option of 3780Link GUI, or through the 3780Link SO program. You may customize one of the sample script files or create your own using the **Notepad** (available via a button within 3780Link SO) or any text editor. 3780Link's script language is documented in the [3780Link User's Guide](#) and in the help file.














## **The 3780Link GUI Window**

The 3780Link GUI window consists of a menu, toolbar, and link state indicator. The layout of the window is shown below:



### **The 3780Link GUI Toolbar**

There are 13 toolbar buttons to control a communications session using 3780Link GUI. The buttons and their equivalent keyboard commands are shown below:

	Auto-Dial (Ctrl+D)		Kill I/O (Ctrl+K)
	Auto-Answer (Ctrl+A)		Run Script (Ctrl+R)
	Connect (Ctrl+O)		Stop Script Execution
	Disconnect (Ctrl+I)		View/Reset Statistics
	Send File (Ctrl+F)		Exit 3780Link (Ctrl+Q)
	Printer Setup (Ctrl+P)		Help (F1)
	Punch Setup (Ctrl+U)		

### **Receiving Files Using 3780Link GUI**

3780Link GUI does not have a function that explicitly allows data to be received. When data is sent from the remote system once a communication session is established, it is received automatically and is stored according to the Printer/Punch Defaults.

## Running 3780Link SO for Unattended Communications Sessions

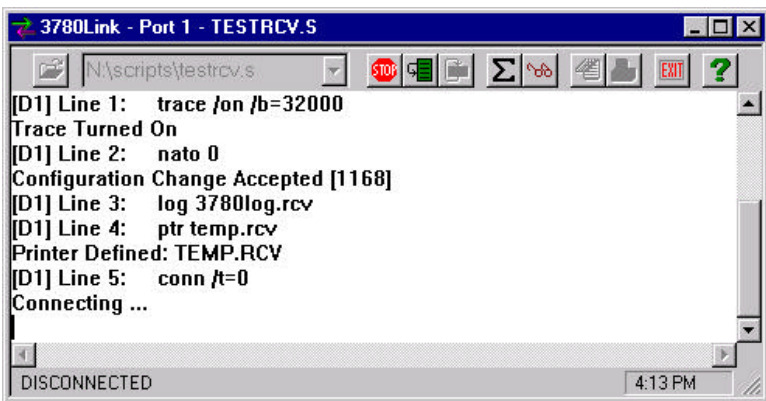
The 3780Link SO program allows you to run completely automated, unattended communications sessions.

There are three ways to start a script with 3780Link SO:

- Click on the “3780Link Script Only” icon and then click the open file button on the toolbar to specify the script file you wish to run.
- Add “-s<filename>” to the command line of the 3780Link SO program item short cut, where <filename> is the name of your script file. Doing this will automatically run the selected script file when double-clicking upon the icon.
- Drag and drop your script file onto an active 3780Link SO window.

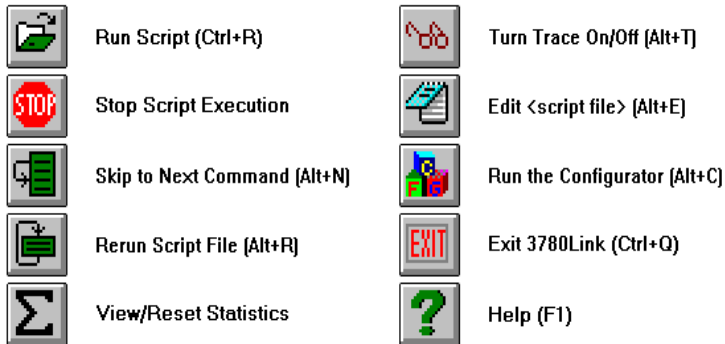
### The 3780Link SO Window

When not minimized, 3780Link SO runs in a window with the script commands echoed as they are performed. After an introduction screen, you will see a window like the one below:



## **The 3780Link SO Toolbar**

There are 10 toolbar buttons to control the execution of your script files. The buttons and their equivalent keyboard commands are shown below:



## **General Features of 3780Link for Windows**

### **Command Line Switches**

Command line switches are passed to 3780Link GUI or 3780Link SO by adding the switch to the “Target” field in the “Shortcut Properties” window.

See the [3780Link User's Guide](#) for a detailed description of the command line switches.

### **Running 3780Link SO as an Icon or as a Window**

When 3780Link SO is running as an icon, the link state of the connection is included in the program title. The five link states are:

Disconnected	Line is disconnected
Line Idle	Line is connected, no data is currently being sent or received
Reader Active	Data is being transmitted
Printer Active	Data is being received to the printer device

Punch Active

Data is being received to the punch device

When 3780Link SO is not iconized, these states are shown at the bottom of the window.

When running as an icon, 3780Link SO terminates without any user intervention when script execution is complete. If you wish to review the 3780Link SO session, use the **Notepad** to look at the “3780link.log” file (or whatever log file name you may have specified.)

If 3780Link SO is running as a window, the window remains as an active application when script execution is complete. This allows you to scroll back and view the output from the 3780Link SO session, or to restart the session.

### **Drag and Drop**

Drag and drop may be used to run script files, to call other script files, to chain to other script files, and to send files. No file name extension verification is performed. In other words, 3780Link SO attempts to run any file that is dragged to it. Script files conventionally are given a “.s” extension, but you are free to use any extension you wish. It is up to you to drag and drop an appropriate script file when using Windows Explorer.

There are several ways to utilize drag and drop:

- From Windows Explorer, drag a script file and drop it onto the “w3780so.exe” file. Windows NT asks you if you want to start 3780Link SO with the file you dragged as the initial file. If you answer yes, 3780Link SO attempts to run the dropped file as a script file.

- or -

- Any time 3780Link SO is active and not running a script, you may drop a script file on it from Windows Explorer.

- or -

- Drag and drop may also be implemented by using the **-d[=n]** switch on the SEND, CALL, and CHAIN script commands. The SEND command waits for a dropped file to send, and the CALL and CHAIN commands wait for a dropped script file to execute. Use the **-d** switch in place of a file name with the SEND, CALL, and CHAIN commands. See the [3780Link User's Guide](#) for more information on script commands.

If the optional **[=n]** is omitted, a default value of 0 is assumed, causing 3780Link to wait indefinitely for a dropped file. If the optional **[=n]** is included, 3780Link waits *n* seconds for a file to be dropped.

As an example, consider the following script file, named “dropscri.s.”

```
:loop  
CALL /d  
GOTO loop
```

When running this script file, 3780Link SO waits indefinitely for another script file to be dropped, effectively resulting in a script file server. When a script file is eventually dropped, the file is executed and control returns to “dropscri.s” after the dropped script completes.

## **MESS BOX.EXE - Message Box Display Program**

If you would like a message box to display at some point during script processing, add the following line to your script file:

```
EXEC mess_box.exe "text" "title"
```

When this command is encountered, script processing will stop and a message box containing the specified text and title string will appear on the screen. Script processing will resume when the operator presses the “OK” button in the message box.

## **TXLAT.EXE - Trace Translation Program**

The TXLAT utility accepts 3780Link trace files as input and converts the hexadecimal EBCDIC codes of these files into a more readable format.

TXLAT runs only from within an MS-DOS session. The DOS command line syntax of TXLAT is:

```
txlat [-b] [-x<file>] -i<file> -o<file>
```

- b**        suppress translation of non-protocol trace characters  
            (use if binary data is expected)
- x**        specify an alternate translation table file (corresponds  
            to **-x** switch in 3780Link)
- i**        specify the input trace file
- o**        specify the translated output file

## **EMUBSC – BSC Protocol Handler Program**

The **Emubsc** process is the background BSC protocol handler that is loaded automatically when 3780Link is run. When loaded in this way, **Emubsc** runs as an icon only.

Under certain conditions when directed by Serengeti Technical Support, you may be instructed to load **Emubsc** directly by clicking on its icon. It would typically be loaded using the following syntax:

```
emubsc -d -v
```

The **-d** and **-v** switches and other **Emubsc** switches are described below:

**-d**                    **Debug mode**

The **-d** switch activates the debug option that writes internal debug information to a file named “emubsc.l”.

**-m size                    Maximum size of “emubsc.1” file**

By default when **Emubsc** is writing to “emubsc.1” the file is not allowed to become larger than approximately 100K bytes. The **-m** switch permits you to change the maximum size of “emubsc.1” – for example, **-m50** establishes the maximum file size to be 50K bytes.

**-t                            Block response time-out**

The **-t** switch is provided to change an internal time-out used when waiting for a reply to a transmitted data block. The BSC protocol defines that this time-out is three seconds, but the **-t** switch enables you to change this time-out if necessary within your environment. For example, **-t5** changes the block response time-out to five seconds.

**-v                            Run in window**

The **-v** switch should only be used in conjunction with the **-d** switch and causes debug messages to be visible in a window as they are written to disk.

**KILLBSC – Remove BSC Protocol Handler Program**

This utility is used to terminate **Emubsc**. It should not be necessary to use this utility during normal operation. The optional command line switches for **Killbsc** are described below.

**-f                            Forced kill**

The **-f** switch may be used to force the termination of **Emubsc** when it is not in the idle state.

**-s                            Silent mode**

The **-s** switch enables the silent mode that suppresses all output to the process window.



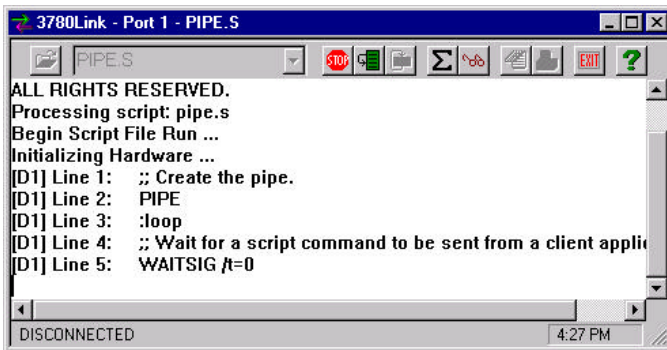
## 3780Link Client Application Program

For those of you who wish to incorporate 3780 emulation into your own applications, 3780Link SO may be used as a server application. (In fact, the 3780Link GUI program uses 3780Link SO in this manner.) Two example programs, a fully functional one written in C and C++, and a very simple one written using Microsoft FoxPro, are included with 3780Link. The FoxPro program, “client.prg”, is very simple and will not be discussed here.

The C and C++ client sample, named **client**, was written using Microsoft Visual C++ and the Microsoft Foundation Classes and it utilizes the Dynamic Data Exchange Management Library (DDEML.) The client program runs properly when 3780Link SO is executing the “pipe.s” script file. Studying the source code for this example program provides guidance in how to write your client application.

The client program provided gives a degree of direct manual control when used in conjunction with 3780Link SO and the “pipe.s” script file. The following paragraphs describe the use of the client program.

The client program automatically loads 3780Link SO if it's not already loaded (using a command line of “w3780so -spipe.s”). You'll see the following 3780Link SO window appear first on your screen followed by the client program window:

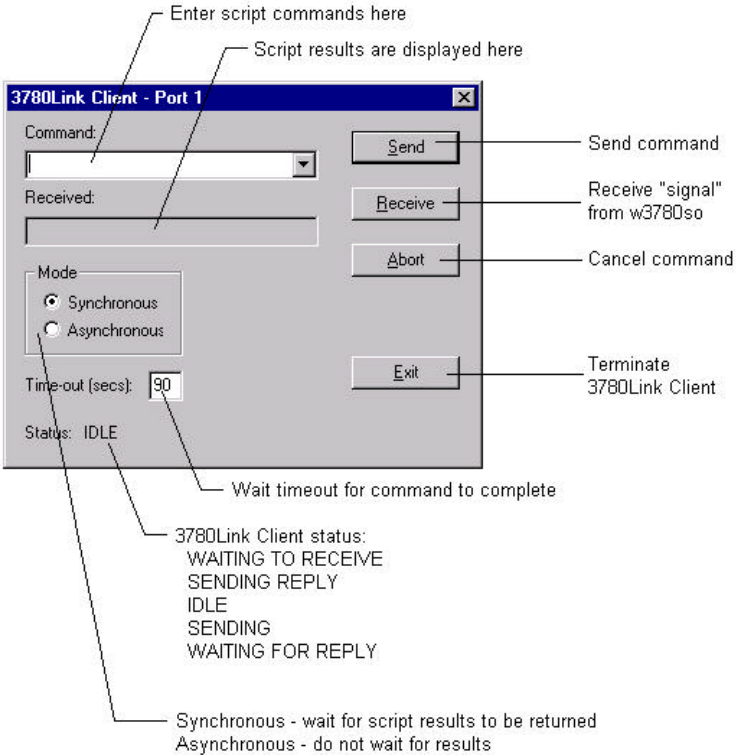


The screenshot shows a window titled "3780Link - Port 1 - PIPE.S". The window contains a text area with the following text:

```
ALL RIGHTS RESERVED.  
Processing script: pipe.s  
Begin Script File Run ...  
Initializing Hardware ...  
[D1] Line 1:  ;; Create the pipe.  
[D1] Line 2:  PIPE  
[D1] Line 3:  :loop  
[D1] Line 4:  ;; Wait for a script command to be sent from a client appli  
[D1] Line 5:  WAITSIG /t=0
```

At the bottom of the window, the status bar shows "DISCONNECTED" on the left and "4:27 PM" on the right.

The client program window is shown below:



The client program can be used to exercise limited interactive control over a 3780Link SO session. This program allows you to enter script commands from the keyboard and have them executed by 3780Link SO. The results of each command are returned and displayed.

**Caution**

The client program is provided as an example program demonstrating how commands may be piped to 3780Link SO from another program. It is *not* intended for production use and you may experience difficulties if you attempt to use it in such a manner.

As you enter commands via the command prompt, you can watch as they execute in the 3780Link SO window.

**Note**

The time-out parameter must be long enough for 3780Link SO to complete the requested command. For example, if you ask 3780Link SO to send a large file and the time-out is too short, the client program will not be able to receive the results of the SEND command from 3780Link SO. You may set the time-out to zero to prevent the client program from timing out.

Some important things to consider when creating a client application of any type are:

- The client program must set itself up as a DDE client for writing script commands to 3780Link SO using DDE Poke transactions.
- The client program must set itself up as a DDE server for receiving result codes back from 3780Link SO using DDE Poke transactions.
- The client program must have a DDE callback function and must process the appropriate messages from the operating system.
- In order for 3780Link SO to act as a server, it must be running the “pipe.s” script file that endlessly waits for script commands to be sent to it and executed.

Notes