

# STCom Help File

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## Liscencing

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## **Future Plans**

In future updates we plan to implement as many suggestions and enhancements as is possible. The following is a list of future enhancements already planned:

- Sealink
- Telink
- Bi-directional operation
- Receive/Send Fax TSRs
- Fax Servers
- Networked Faxing

## **Introduction to Streamline Communications**

Streamline Communications is a Windows based Telecommunications Package. It has been developed for the use of people in many different areas of expertise, business, and recreation.

We have attempted to include as many functions as we can without making STCom complicated or laborious to use.

Streamline Communications currently supports ten different protocols, three terminal emulation modes (TTY, ANSI, and VT100), a very powerful script language, clipboard capturing, and many more features.

There is also a Scroll backmode by using the insert key during a session.

We hope you enjoy Streamline Communications as much as we did building it.

We also encourage any comments or suggestions about further development or improvements on this product.

## **Help Menu**

Index F1 : Simply starts up this help file.  
Script : Simply starts up the script file help.  
Icons : Simply Starts up the Icons Help File.  
About : Presents you with a dialog telling you about this package.

## Utilities Menu

Calculator

Calendar

Notepad

Shell to DOS

Text Search

Run Script Alt+S

## **Modem Menu**

Phone Book Alt+B

Dial Modem Alt+D

Hangup Alt+H

## Protocol Information and History

ZModem

XModem

YModem

ASCII

Kermit

CompuServe Bt



## **Edit Menu**

The Edit Menu allows you access STCom's clipboard facility. At any time during a telecommunications session you can copy data in the terminal window to the clipboard provided by Windows.

To copy to the clipboard, simply highlight the area you wish to cut to the clipboard, choose Edit, and select Copy to Clipboard. You may also press CTRL+INS to copy to the clipboard as well. Please keep in mind that each time you use this function, the previous clipboard data is erased.

This function is handy when you wish to insert some data into another currently running application while maintaining your telecommunications session.

## **File Menu**

The File menu includes commands that enable you to Upload and Download files, Capture Incoming Data, and Exit.

Upload/PgUp

Download/PgDn

Capture/Alt+C

Exit/Alt+F4

## **Exiting Streamline Communications**

Selecting this option or pressing Alt+F4 will hangup the modem and shut down Streamline Communications.

## Preferences Menu

The Preferences Menu allows you to access a number of dialogs designed to let you setup STCom the way you prefer to use it. The following is a listing of the dialogs available and thier functionality:

Terminal Font

Parameters

Flow Control

Device

Dialer

Directories

Modem

Quick modem configure

Protocols

## Quick Modem Configuration

When you select this option you will be presented with a Select Modem dialog containing a listing of available modems and three buttons.

The following is a listing of each list and button and thier functionality:

Modems Listing : This listing is simply a list of modems that STCom can automatically configure and setup various options for. You can either double click on a selection in the list or highlight a selection and press the OK button to start the automatic configuration of your modem.

**Please Note:**

You will need to have already setup a valid com port for this function to work.

OK Button : This button simply starts the automatic configuration of your modem using the highlighted selection in the modems listing.

Cancel Button : This button simply aborts automatic configuration of your modem.

Help Button : This button starts up the current help you are reading.

## Modem Options

When you select this option you will be presented with a Modem Information dialog containing three groups and three buttons.

The following is a listing of each group and button and their functionality:

- Commands Group : This group contains 7 fields.
- The Initialize field specifies the command to send to your modem when initializing.
  - The Dial field specifies the string that is used to start the dial sequence for your modem. ATDT is used for touch tone phones and ATDP is used for pulse tone phones. If you are working from an office and need to dial a 9 before dialing the number you wish to connect with you would use ATDT9,<Phone Number>. The comma tells STCom to pause before dialing the rest of the number.
  - The Dial Suffix field specifies the string that will be appended to the end of the dial string that is sent to the modem.
  - The Cancel Dial field specifies the string that will be sent to the modem in order to cancel the dialing sequence.
  - The Hangup field specifies how you are going to tell the modem to hangup. Placing the command DTR in this field will tell STCom to toggle the DTR when performing the hangup sequence.
  - The Configure field contains the string that is used to configure your modem. This field has one special command that all the other fields do not. The (|) pipe character tells STCom to wait until it has received an OK from the modem before sending the next character in the command.
  - The Answer field contains the string that is sent to the modem in order to tell it to answer the phone.
- Link Rate Group : This group contains one field and one check box.
- The Default BPS Rate field specifies that BPS rate that STCom will initially startup in. The values in this field are dependent upon many performance issues within windows.
  - The Lock DTE Rate check box simply tells STCom whether you wish to lock the DTE rate or not. It is advisable, and almost necessary, to lock the DTE rate when communicating at 9600 or above.
- Return Codes Group : This group contains 7 fields.
- All of these fields simply correspond to the string your modem will return when one of these situations arise.
- OK Button : This button simply saves any changes made to the Modem Information.
- Cancel Button : This button simply aborts any changes made to the Modem Information.
- Help Button : This button starts up the current help you are reading.

## Directories Options

When you select this option you will be presented with a Directory Settings dialog containing three fields and three buttons.

The following is a listing of each group and button and their functionality:

- Upload Directory : This field defines the path to the drive and directory that STCom will default to when you are performing an upload. STCom defaults to the installation directory.
- Download Directory : This field defines the path to the drive and directory that STCom will default to when you are performing a download. STCom defaults to the installation directory.
- Home Directory : This field defines where STCom will find all of its associated files. STCom defaults to the installation directory. There is no need to change this entry.
- OK Button : This button simply saves any changes made to the Directory Settings.
- Cancel Button : This button simply aborts any changes made to the Directory Settings.
- Help Button : This button starts up the current help you are reading.

## Dialer Options

When you select this option you will be presented with a Dialer Options dialog containing two groups and three buttons.

The following is a listing of each group and button and their functionality:

- Retries Group : This group contains two check boxes.
- The Maximum retries field defines the maximum number of times STCom will attempt to dial a phone number before giving up. You can enter any value between 1 and 65535. STCom defaults to 10.
- The Time between retries field defines the number of seconds that STCom will wait after a failed dial before retrying the number again. You can enter a value between 0 and 255. STCom defaults to 60.
- Options Group : This group contains five check boxes. Each of the check boxes are strings that STCom will look for. If any of these strings are found and the corresponding check box is marked, STCom will abort the current dialing attempt.
- OK Button : This button simply saves any changes made to the Dialer options.
- Cancel Button : This button simply aborts any changes made to the Dialer options.
- Help Button : This button starts up the current help you are reading.



## Device Options

When you select this option you will be presented with a Select Device dialog containing two groups and three buttons.

The following is a listing of each group and button and their functionality:

- Device Group : This setting determines the device layer that STCom will use for communications with the serial port. This can either be COMM.DRV (Standard) to use the Windows communications API, or FOSSIL to use a DOS based Fossil Driver. STCom Defaults to COMM.DRV.
- Buffer size Group : This is the size of the input and out buffer that STCom uses at the device layer level. This can be 2048, 4096, 8192, or 16384. STCom defaults to 16384.
- OK Button : This button simply saves any changes made to the Device options.
- Cancel Button : This button simply aborts any changes made to the Device options.
- Help Button : This button starts up the current help you are reading.

## Flow Control Options

When you select this option you will be presented with a Flow Control dialog containing two groups and three buttons.

The following is a listing of each group and button and their functionality:

Hardware Flow Control : This group contains three check boxes.

None tells STCom not to use any hardware flow control.

RTS/CTS, which is the default, tells STCom to use the RTS/CTS hardware flow control.

DTR/DSR tells STCom to use the DTR/DSR hardware flow control.

Software Flow Control : This group contains two check boxes and two fields.

The Receive flow control check box determines whether or not STCom honors software flow control characters when receiving characters. STCom defaults to off.

The Transmit flow control check box determines whether or not STCom honors software flow control characters when transmitting characters. STCom defaults to off.

The Xon Char field specifies the ASCII code of the software flow control character that STCom uses to restart data flow after it has been stopped by and Xoff character. The default is 17, or ^Q. This value can be between 0 and 255.

The Xoff Char field specifies the ASCII code of the software flow control character that STCom uses to stop data flow. This can be any value between 0 and 255. The default is 19, or ^S.

OK Button : This button simply saves any changes made to the Flow Control options.

Cancel Button : This button simply aborts any changes made to the Flow Control options.

Help Button : This button starts up the current help you are reading.

## Protocols

Protocols are used for the transfer of data to and from your system and the remote system you are communicating with. There are several protocols available and they all have different abilities and functionality. The following is a list of available protocol setup dialogs and a brief overview of the abilities and functionality of each:

General

ZModem

ASCII

Kermit

CompuServe B+

## General Protocol Options

The general protocol options allow you to specify how all protocols will handle standard protocol functions.

When you select this dialog you will be presented with two groups of check boxes and three buttons. The following is a description of each:

**Naming Conflicts Group:** This group contains three check boxes that deal with the way STCom handles files when a file of the same name and path already exists. This option will only apply when performing a Download.

Fail Transfer simply means to abort the whole download process.

Rename Incoming File tells STCom to create a different filename for the incoming file. STCom will keep the name as similar to the original as possible. An example is STCOM.ZIP renamed to STCOM.ZI0.

Overwrite Existing File tells STCom to overwrite the file that already exists with that name and path. This means that the previous file will no longer exist and cannot be retrieved at a later date.

**Options Group** : This group applies to all protocols and contains two check boxes.

Save Partial Files tells STCom that you wish to save the incoming file even if the download session terminated before completing the transfer.

RTS when Writing tells STCom that you wish to lower the RTS signal of the port when writing download data to the disk. STCom defaults this on. If you are on a slower machine or certain network disks you may want to set this off to prevent loss of data.

**OK Button** : This button simply saves any changes made to the general protocol options.

**Cancel Button** : This button simply aborts any changes made to the general protocol options.

**Help Button** : This button starts up the current help you are reading.

## **The XModem Protocol**

XModem is the oldest protocol supported by STCom. It was first developed by Ward Christensen in 1977 and then placed in the public domain. It became a very popular protocol and is still in wide use. However, its use has diminished over the years as faster and more efficient protocols arrived.

XModem is also the simplest, and perhaps the slowest, protocol supported by SDP. XModem uses 128 bytes blocks, requires an acknowledgement of each block, and uses only a simple checksum for data integrity.

STCom provides a few options for better speed and flexibility when using XModem. Such options are 1024 byte(1k) blocks, CRC checks, G Mode, and relaxed mode.

The XModem protocol does not support batch transfers.

## **The YModem Protocol**

Ymodem is basically the same as XModem-1k with batch file transfer ability. This means a single YModem transfer can transfer as many files as you wish. It also provides the receiver with information about the incoming files such as: file name, size, date.

Ymodem does support batch transfers.

## The ZModem Protocol

Zmodem was developed by Chuck Forsberg under contract to Telenet. It was developed for the public domain and its purpose was to provide a durable protocol with strong error recovery features and good performance over a variety of network types (satellite, switched, etc.). For the most part it has achieved these goals and is by far the best choice overall.

ZModem offers the best overall mix of speed, features, and tolerance for errors. This protocol has lots of room for growth, and many options. Unlike XModem and YModem, Zmodem employs headers, data subpackets, and frames. This allows ZModem to implement many features that other protocols simply cannot achieve.

ZModem will do its best to correct errors in the transmission. It does this by a variety of ways. It will use file recovery if the transfer was aborted and it will also increment and decrement block sizes to compensate for errors. For instance, if you are using the 8k option with ZModem and you get a noisy line ZModem will drop to 1k blocks and if the errors still occur will then try 512 byte blocks. If the errors still persist it will try 256 byte blocks as a last resort. After it has tried the 256 byte blocks, if the errors still persist, it will abort the transfer.

You also have the ability to use 8096 byte blocks using this protocol. This option is available from your upload and download dialogs by selecting the ZModem-8k selection when performing file transfers. ZModem offers batch transfers.

[ZModem Protocol Options](#)

## ZModem Protocol Options

When this option is selected you will be presented with ZModem Options dialog containing one group and three buttons. As time goes by there will be many more options added to this dialog. The following is a listing of the functionality of each group and button:

Auto-start options: This group simply allows you to specify whether or not you wish STCom to automatically start a ZModem download when it receives a ZModem upload signal from the remote system.

OK Button : This button simply saves any changes to the ZModem protocol options.

Cancel Button : This button simply aborts any changes to the ZModem protocol options.

Help Button : This button starts up the help you are reading.

ZModem Information



## The ASCII Protocol

The term ASCII is a bit of a misnomer. In an ASCII transfer neither side adheres to any agreed upon rules for data transfer. An ASCII protocol is really just a convenient way of transferring a text or ASCII file.

A good example of a situation where you may use an ASCII protocol is when the machine you are linked with doesn't support any type of protocol. One such situation would be the need to transfer a text file to a minicomputer that does not have protocol ability. To solve this issue you would connect your PC to the mini as a terminal, start up the minicomputers editor, open a new text file, and start an ASCII transfer of the file you wished on the mini. The mini would see the characters being transmitted as keystrokes and input and input them to the editor. You would then finish the transfer by saving the contents in the editor to a file on the mini.

STCom provides options that will allow the user to tailor the transfer of data so it matches the receiving machines speed. Such options are, delays between transmitted characters and lines. In the above example you may need to set these type of delays in order to stop the overflow of the editors keystroke buffer.

When receiving data using an ASCII protocol it is difficult to know when the transfer is finished. This is because there is no agreed upon method for telling the receiver when the transfer is complete. STCom will terminate the transfer when it receives one of the following three conditions: when it receives a ^Z, (This can be suppressed, or changed), when it times out waiting for data, or when the user aborts the protocol.

The ASCII protocol does not support batch transfers.

ASCII Protocol Options

## ASCII Protocol Options

When you select this option a an ASCII Protocol Options dialog will appear containing seven groups and three buttons. The following is a listing of each group and button and thier functionality:

- Upload CR Handling : This setting tells STCom what to do with a carriage return character (ASCII #13) during an ASCII upload.
- STCom defaults to SEND which means that the character should be transmitted to the remote system during the upload.
- STRIP tells STCom not to send these characters.
- SENDLF Tells STCom to send the carriage return as well as a line feed character (ASCII #10).
- Upload LF Handling : This setting tells STCom what to do with a line feed character during ASCII Uploads.
- STCom defaults to SEND which means that the character should be transmitted to the remote system during the upload.
- STRIP tells STCom not to send these characters.
- SENDCR Tells STCom to send the carriage return as well as a carriage return character (ASCII #13).
- Upload Terminators : The Stop on ^Z check box defaults to On. This tells STCom to stop the transfer of an ASCII file when it encounters a ^Z character (ASCII #26). If it is set off the transfer continues until the true end of the file is encountered.
- The EOL Character field specifies what STCom is supposed to recognize as the end-of-line character when transmitting or receiving an ASCII file. The value can be anywhere between 0 and 255. STCom defaults this to 13.
- Delays : The Delay after Character field determines the amount of time, in milliseconds, that STCom waits after each ASCII character it transmits. This can be any value between 0 and 65535. STCom defaults to 0.
- The Delay after Line field determines the amount of time, in milliseconds, that STCom waits after each line of text it transmits. This can be any value between 0 and 65535. STCom defaults to 0.
- Download CR Handling : This setting tells STCom what to do with a carriage return character (ASCII #13) during an ASCII download.
- STCom defaults to KEEP which means that the character is placed into the received file.
- STRIP tells STCom to discard the character.
- ADDLF places a line feed character (ASCII #10) in the file after the carriage return character.
- Download LF Handling : This setting tells STCom what to with a line feed character (ASCII #10) during an ASCII download.
- STCom defaults to KEEP which means that the character is placed into the received file.
- STRIP tells STCom to discard the character.
- ADDLF places a carriage return character (ASCII #13) in the file before the line feed character.
- Download EOF Timeout : This field tells STCom the amount of time, in milliseconds, to wait during an ASCII transfer before assuming the transfer is complete. This

can any value bewteen 0 and 65535. STCom defaults to 2000.

- OK Button : This button simply saves any changes made to the ASCII Protocol Options.
- Cancel Button : This button simply aborts any changes mad to the ASCII Protocol Options.
- Help Button : This button starts up the help you are reading.

ASCII Information

## **The Kermit Protocol**

This protocol was developed to enable transfers in environments that other protocols cannot handle. Examples of these environments are links that only pass 7 data bits, links that can't handle control characters, computer systems that can't handle large blocks, and other specialized links such as a PC and a mainframe.

This protocol was developed for the public domain at Columbia University in New York City. The name Kermit actually refers to Kermit the Frog from The Muppet Show. To receive the complete description of this protocol write to Columbia University, Kermit Distribution, Department OP, 612 West 115th Street, NY, NY,10025.

[Kermit Protocol Options](#)

## Kermit Protocol Options

When you select this option you will be presented with a Kermit Options dialog containing four groups and three buttons. The following is a list of each group and button and their functionality:

- Error Correction group: Error Correction controls the type of block error detection. It can be set to CSUM1, CSUM2, or CRCK (for checksum format 1, checksum format 2, and kermit-style CRC, respectively). All kermit protocols are required to support CSUM1. CSUM2 and CRCK offer better error detection but are not supported by all kermit implementations. CRCK is recommended since it offers the highest level of error detection and it also negotiates down to the lowest commonly supported block check format.
- Prefixes Group : This group contains three fields.
- The Hi bit field specifies the ASCII code of the prefix character used to encode 8 bit data into 7 bit data. Generally you won't need to change this prefix.
- The Repeat field specifies the ASCII code of the repeated-character prefix that kermit uses when compressing long strings of repeated characters. Generally you will not to change this prefix.
- The Control field specifies the ASCII code of the control-character that kermit uses to transform control characters into printable ASCII characters. Generally you will not need to change this prefix.
- Padding Group : The Count field specifies the number of pad characters that are added to the front of all kermit packets. The only reason you might need padding is if the remote system needs a delay between sending you a packet and being ready to accept a packet itself. In this case you specify enough padding characters to accommodate the required delay. Generally you won't need to use padding at all. STCom defaults to 0 which disables padding.
- The Character field specifies the ASCII code of the padding character sometimes used at the front of kermit packets. This value is used only if the count field is not set to 0. The usual padding character is ASCII #32 (the space character).
- Packet Group : The Max Length field specifies the maximum length kermit requests when negotiating with the remote kermit. The maximum value of standard kermit is 91 and the value recommended by the Kermit Protocol Manual is 80. If the remote kermit supports long blocks, as does STCom, values up to 1024 can be specified. Kermit sessions always use the lower of the block values requested by each side. This makes it safe to specify long blocks even when you do not know whether or not the other side supports them.
- The Terminator field specifies the ASCII code of the terminator-character. This is the character that terminates all kermit blocks. The terminator character is usually ASCII #13 (carriage return).
- OK Button : This button simply saves any changes made to the Kermit Protocol Options.
- Cancel Button : This button simply aborts any changes made to the Kermit Protocol Options.
- Help Button : This button starts up the help you are reading.

[Kermit Information](#)

## The CompuServe B+ Protocol

The B+ protocol is a proprietary file transfer and transport protocol designed and used exclusively by CompuServe.

CompuServe offers 3 varieties of B+: Classic B, Quick B, and B+. SDF only supports B+ since it has the most capabilities and is recommended by CompuServe.

The CompuServe B protocol was developed in 1981 to provide support for a special purpose Vidtex terminal manufactured by the Tandy Corporation. It was the outgrowth of a proposed Bi-Sync oriented protocol, but with a different packet structure and provision for more than even and odd packets. The file transfer capability was added in 1982 to replace the CompuServe A protocol with a more robust protocol which was in keeping with the over-all B Protocol design.

Some of the underlying assumptions made in designing the B Protocol were due to the capabilities of personal computers which were available at the time. Such machines were generally limited in the amount of available memory, 64 kilobytes being a large capacity. Other factors, such as the lack of a true UART for data communications, resulted in the send/wait nature of the protocol where only a single protocol packet at a time was sent.

The explosive growth of the Personal Computer industry has given us a plethora of machines, most of which have far exceeded the early limitations of memory and communication ability. This growth has been accompanied by a multitude of file transfer protocols, such as XMODEM, KERMIT, and ZMODEM. CompuServe, realizing the need for enhancement, has developed the B Plus Protocol to meet the increasing demands being made upon its communication network and host computers, and to provide added utility for its large family of users.

As the name implies, B Plus is an extension of the B Protocol. In particular:

- o Ability to send multiple packets without waiting for individual acknowledgements.
- o Larger data packets (up to 1k at present).
- o Optional use of modified XMODEM CRC-16 check method.
- o Extensions to the standard control character quoting.
- o Provision of a mechanism to exchange transport and application parameters.

### CompuServe B+ Protocol Options

## Compuserve B+ Protocol Options

When you select this option you will be presented with a B+ Options dialog containing one group and three buttons. The following is a listing of each group and button and their functionality:

B+ Protocol Group : This group contains 2 check boxes.

If Enabled is selected STCom automatically starts a Compuserve B+ file transfer if Compuserve requests it.

If Disabled, STCom ignores all file transfer requests from Compuserve.  
STCom defaults to Enabled.

OK Button : This button simply saves any changes made to the B+ Options.

Cancel Button : This button simply aborts any changes made to the B+ Options.

Help Button : This button starts up the help you are reading.

Compuserve B+ Information

## ICONS HELP



Upload a File



Dial the modem



Hangup the modem



Edit your STCOM Phone Book



Launch Calculator



Launch Notepad



Locate Text on Disk



Download a File



Capture Terminal Input



Set communications parameters



Change Terminal Fonts



Launch Calendar



Shell to DOS



Run Script



## **Run Script**

STCom has a very powerful script language built into it. Clicking on this icon will present you with a listing of existing scripts. A script file is simply a series of automated commands that you wish STCom to perform.

For further information on script files refer to the Script File Help in STCom.

## **Locate Text on Disk**

Clicking on this icons will start the Text Find utility that comes with STCom.

This utility is quite fast and very handy. How many times have you saved a file somewhere on your system or network and couldn't remember where it was? This utility saves you a lot of time. It allows you to specify a certain piece of text and a search path and mask as well as specify whether or not to make the search case sensitive. The great thing about this utility is that it does not search just text files. It will search any file that matches the search mask. This means it can be databases, text, EXEs, Etc.

## Shell to DOS

Clicking this icon will simply open up a DOS session. To return to STCom from a DOS session simply type exit or use ALT+Esc to flip through the active sessions.

PLEASE NOTE: IT IS NOT ADVISABLE TO HAVE A DOS SESSION OPEN AT THE SAME TIME AS WORKING WITH THE REMOTE. IF YOU SHELL TEMPORARILY TO PERFORM A DOS FUNCTION IT IS ADVISABLE TO USE EXIT AS OPPOSED TO ALT+Esc.

REFER TO THE COMM.DRV SECTION FOR FURTHER INFORMATION.

## **Launch Notepad**

Clicking this icon simply starts up the notepad that comes with STCom.

The notepad is useful for browsing captured data files or reading standard text files that you have saved on your system. It also contains a full complement of editing features and clipboard features.

## **Launch Calendar**

Clicking this icon simply starts up the Calendar that comes with STCom.

## **Launch Calculator**

Clicking this icon simply starts up the calculator that comes with STCom. This utility was added for those using STCom for business or financial reasons.

## Upload a File

Uploading a file simply means transferring a file from your system to the remote system you are currently connected with.

When you select this icon you will be presented with list of protocols to use for the transfer. Depending on the type of protocol you select you will be presented with one of two different file selection menus.

### Batch Protocols

If you have selected a batch protocol, you will be presented with a batch upload dialog. This dialog allows you to select multiple files by simply double clicking on a file listed in the Files list. You can change directories and drives by double clicking on selections that appear in the Directories list.

There are 5 buttons that exist in this dialog:

OK : This button will start the transfer once you have selected the file(s) that you wish to transfer.

Cancel: This button will abort the whole upload process on your side.

Help : This button simply brings up the current help file you are reading

Add : This button acts the same as the double click function. You will need to highlight the file that you wish to add to the list of outgoing files before this button will work.

Remove: This button simply removes the highlighted file from the Outgoing Files listing.

### Non Batch Protocols

If you have selected a non-batch protocol, you will be presented with a select file to upload dialog. This dialog allows you to select only a single file by simply double clicking on a file listed in the Files list. You can change directories and drives by double clicking on selections that appear in the Directories list.

There are 3 buttons that exist in this dialog:

OK : This button will start the transfer once you have selected the file that you wish to transfer.

Cancel: This button will abort the whole upload process on your side.

Help : This button simply brings up the current help file you are reading

## Download a File

Downloading a file simply means receiving a file from the remote system you are currently connected with to your system.

When you select this icon you will be presented with list of protocols to use for the transfer. Depending on the type of protocol you select you will be presented with one of two different file selection menus.

### Batch Protocols

If you have selected a batch protocol, you will be presented with a Download Directory dialog. This dialog allows you to specify where you wish STCom to save the file(s) you receive. You can change directories and drives by double clicking on a selection in the Directories Listing.

There are 3 buttons that exist in this dialog:

OK : This button will start the transfer once you have selected the directory that you wish to save the files into.

Cancel: This button will abort the whole download process on your side.

Help : This button simply brings up the current help file you are reading

### Non Batch Protocols

If you have selected a non-batch protocol, you will be presented with a Choose Download Filename Dialog. This dialog allows you to specify the Name and Directory that you wish to save this file as. You can change directories and drives by double clicking on a selection in the Directories list. There are 3 buttons that exist in this dialog:

OK : This button will start the transfer once you have selected the file that you wish to transfer.

Cancel: This button will abort the whole Download process on your side.

Help : This button simply brings up the current help file you are reading



## Dial the Modem

Dialing the modem simply means dial the phone number that you wish to establish a telecommunications session with.

When you select this icon you will be presented with a Select Whom? Dialog.

This dialog has one field and four buttons:

Phone Number Field: This field allows you to manually type a phone number that you wish to dial.

Select Button : This button will present you with a listing of entries in your STCom Phone Book. Double clicking on one of the entries in this listing will select the phone number that is associated with that entry.

OK : This button will start the dialing process for the number you have selected.

Cancel : This button will abort the whole dialing process.

Help : This button simply brings up the current help file you are reading.

## **Hangup the Modem**

Clicking this icon will immediately terminate (drop the carrier) the current telecommunications session.

## **Change Terminal Fonts**

Changing Terminal Fonts simply means changing the size and style of the font used in the terminal window. The number, type, and abilities of the font selection will depend on the amount of fonts you have installed in Windows.

STCom defaults to using the standard system font.

When you click on this icon you will be presented with the standard Windows font selection dialog.

## Set Communications Parameters

Setting communication parameters simply means setting com ports, baud rates, parity, data bits, and stop bits. All of these parameters affect the way STCom interacts with the remote system. As a general rule you will not use this option very often since all these things, except com port, are set in the Phone Book entry.

When you click on this icon you will be presented with a Communications Parameters dialog containing five groups of check boxes and three buttons.

The following is a listing of the functionality each of these groups and buttons:

- Port Group : This group specifies the com port you wish to use for communications.
- Baud Group : This group specifies the baud or BPS Rate that you wish to use when dialing the remote system. The baud rate will depend upon three different factors. 1 - The capabilities of the remote system, 2 - The capabilities of your modem, and 3 - the capabilities of the COMM.DRV you have installed in your windows SYSTEM.INI.
- Parity Group : This group specifies the parity of the remote system. There are five valid values for this field. They are as follows:
- None - NoParity
  - Odd - OddParity
  - Even - EvenParity
  - Space - SpaceParity
  - Mark - MarkParity
- The default value for the parity setting is NoParity.
- Data Bits Group: This group specifies the Data Bit Capabilities of the remote system. Valid entries are 5, 6, 7, 8.
- Stop Bits Group: This group specifies the Stop Bit Capabilities of the remote system. Valid entries are 1, 2.
- OK Button : This button simply saves any changes or additions to the Parameters.
- Cancel Button : This button simply aborts any changes or additions to the Parameters.
- Help Button : This button simply brings up the current help file you are reading.

## Capture Terminal Input

Capturing terminal input simply means writing all incoming text to a text file of your choice. This is handy when you wish to keep a certain amount of incoming data for browsing at a later date.

Once you have started a capture you can stop capturing by clicking on this icon again.

When you select this icon you will be presented with a Capture File Name dialog. The filename defaults to CAPTURE.CAP. You can specify any name for the file by typing it in the filename field. You can also specify a directory and drive by double clicking on one of the entries in the Directories listing.

There are four buttons available in this dialog:

- OK : This button will start the capture of terminal input. If the file specified already exists, you will be presented with a query dialog. This dialog will tell you that the file already exists and present you with three buttons:
  - Yes : Selecting this button tells STCom to append to the end of the existing file.
  - No : Selecting this button tells STCom to overwrite the existing file and start writing as if it were a new file.
  - Cancel: Selecting this button aborts the whole capture sequence.
  - Help : This button simply brings up the current help file you are reading.

Cancel: This button will abort the whole capture sequence.

Help : This button simply brings up the current help file you are reading

## Edit you STCom Phone Book

The phone book is where you will setup names, numbers, and parameters for the various remote systems that you will be connecting with. The phone book provides the listing of systems that you will dial when you click on the select button that appears when you use the Dial the Modem icon.

When you click on this icon you will be presented with a listing of existing entries in the phone book and five buttons. Double clicking on any entry in the listing will result in the same action as highlighting an entry and clicking the change button.

The following is a description of the function of each button:

Add : This button will present you with a blank Phone Book Entry Dialog.

Refer to the following text on phone book entries for further information.

Change: This button will present you with a Phone Book Entry Dialog with then fields already filled in with the highlighted entrys information.

Refer to the following text on phone book entries for further information.

Remove: This button will delete the highlighted entry from the Phone Book.

Load : This button will present you with a file dialog. Simply select the phone book file you wish to use and click OK. To create a new phone book listing type a new filename into the filename field and click OK.

OK : This button simply returns you to the terminal window.

Help : This button simply brings up the current help file you are reading

## Phone Book Entry Dialog

The Phone Book Entry Dialog is where you will enter all the information pertaining to the remote system you wish to establish a telecommunications session with.

This dialog contains ten fields and three buttons. The following is an explanation of each field and button:

Name Field : This field simply contains a name that you wish to associate with the remote system that you will be calling. This name appears in several places during the dialing sequence and the remainder of the session.

Phone Field : This field contains the phone number that will be dialed in order to gain access to the remote system.

Baud Field : This field specifies the baud or BPS Rate that you wish to use when dialing the remote system. The baud rate will depend upon three different factors. 1 - The capabilities of the remote system, 2 - The capabilities of your modem, and 3 - the capabilities of the COMM.DRV you have installed in your windows SYSTEM.INI.

Parity Field : This field specifies the parity of the remote system. There are five valid values for this field. They are as follows:

N - NoParity  
O - OddParity  
E - EvenParity  
S - SpaceParity  
M - MarkParity

The default value for the parity setting is NoParity. If you make a mistake in this entry, it will use that default.

Data Bits Field: This field specifies the Data Bit Capabilities of the remote system. Valid entries are 5, 6, 7, 8.

Stop Bits Field: This field specifies the Stop Bit Capabilities of the

remote system. Valid entries are 1, 2.

Duplex Field : This field specifies the duplex, or echo capabilities, that you wish to use during the session with the remote system. Valid entries are F - Full, H - Half.

Protocol Field : This field specifies the default protocol that you wish to use while communicating with the remote system. This simply means that that protocol will be highlighted automatically when you perform Downloads or Uploads.

Last Call Field: This field will contain the last date that you called this system on. It is a read-only field.

Times On Field : This field will contain the amount of times you have called this system. It is a read-only field.

OK Button : This button simply saves any changes or additions to the Phone Book.

Cancel Button : This button simply aborts any changes or additions to the Phone Book.

Help Button : This button simply brings up the current help file you are reading.

## Windows Communications Drivers

Communications applications gain a lot from the Windows architecture. These gains, unfortunately, are offset by a loss of performance. Because of the fact that Windows forces a lot of overhead on communications applications, the highest achievable baud rate and throughput will always be considerably lower than applications running under DOS.

Because there are some many different variables that come into play, (Machine Speed, INI file settings, poorly acting applications, replaceable COMM.DRV files, etc.), it is impossible to tell you exactly how STCom will act on your system.

One thing to note is that the standard COMM.DRV that is available with Windows will only support baud rates up to 57600.

The following is a few ways that you can optimize STCom's performance on your system:

- Use as low a baud rate as possible. ie: Don't use 38400 when linking with a system that only supports 2400.
- While communicating, reduce the number of DOS boxes currently running. It is preferable to have no DOS sessions active while STCom is running. Having DOS boxes running in the background always results in lower throughput for communications applications in Windows.
- Use a 16550A Uart, which has a 16 byte FIFO Buffer, and set COMxFIFO=On in the SYSTEM.INI.
- Set the COMBoostTime value in the SYSTEM.INI above 2.
- Replace the COMM.DRV in the SYSTEM.INI with a higher performance driver.
- In those cases where incoming data is extremely critical use an intelligent serial port board, which offloads serial interrupt processing tasks from the CPU.

For highest performance and reliability, intelligent communications boards with replacement drivers are the best solution. Intelligent communications boards use a dedicated processor to handle the physical serial I/O. This relieves the main CPU of that burden and assures that received data will be retrieved in a timely fashion. The intelligent board then holds the received data until the Windows application asks for it.

Below is a list of intelligent communications boards that we are aware of:

T/PORT board from Telcor Systems Corporation, voice: 508-653-3995, fax: 508-651-0065.

DigiBoard family of boards, DigiBoard Incorporated, voice: 612-943-9020, BBS: 612-943-0812.



## SYSTEM.INI Settings

The following is a listing of entries in the SYSTEM.INI that will affect performance of STCom under Windows.

### Comm.Drv

The comm.drv= entry specifies the communications driver that windows will use for accessing serial ports. The default driver that comes with Windows will only support up to 57600 Baud. There are a few replacement drivers that will allow higher performance, and additional features.

Below is a list of replacement communications drivers that we are aware of:

CYBERCOM.DRV from CyberSoft Corporation Pty Ltd., also available as CYBERD.ZIP on the TurboPower BBS and on CompuServe.

TURBOCOM.DRV from Pacific Comware, voice: 503-482-2744, fax: 503-482-2627, BBS: 503-482-2633.

### ComXAutoAssign

Examples:

```
Com1AutoAssign=-1
Com2AutoAssign=0
Com3AutoAssign=2
```

These entries tell Windows how to handle device contention when two virtual machines attempt to access the same port.

A value of -1 tells Windows to popup a dialog box whenever a port is owned by another virtual machine.

A value of 0 tells Windows to allow virtual machines to access the port as it wishes. This value will obviously result in some weird results if two or more virtual machines are accessing the same port.

A value of 2, which is the default, means the virtual machines owns the port for up to 2 seconds beyond it's last port access. After that time Windows considers the port available for other virtual machines. Values greater than 1000 are ignored.

### COMXFIFO

Examples:

```
COM1FIFO=1
COM2FIFO=0
```

These entries tell Windows whether to enable the FIFO (first in, first out) buffer available on 16550A uarts.

A value of 0 means disable the FIFO.

A value of 1 means enable the FIFO.

If the uart doesn't have a FIFO buffer this setting is ignored by Windows.

### COMIrqSharing

Examples:

```
COMIrqSharing=Off
COMIrqSharing=On
```

This entry controls Windows IRQ sharing logic for ports. Windows sets this to Off unless you are using a Microchannel-bus or EISA-bus machine. You should set this to on only if you are sure your serial port hardware can share IRQs.

### COMBoostTime

This entry applies to all ports. It is the number of milliseconds by which the time slice of the virtual machine is extended after processing a serial port interrupt. The default value is 2.





