Topics for File Transfer Operations:

Zmodem
Send Settings
Receive Settings

Help for Edit Options

Softerm includes a selection of edit options, available for Send and Receive file transfer operations, to compensate for the variations in data formats used by host computers.

These options allow the source file to be reformatted as the file is transferred to its destination.

Edit options may be set for a particular File Transfer Profile so they will be in effect each time the profile is used.   Edit options also may be changed from the Session Window's File menu before starting a file transfer operation.

For additional information about the File Transfer Edit Options, select:

High Bit
End of Line character
Hex dump
Pad blank lines
Space compress
Translate characters
Remove characters
Tab length

High Bit

The High Bit of each character in the source file may be Set, Cleared or left at No Change.   In most cases, you would leave this option set to No Change to leave the High Bit unaffected.

Application: If you transferred a text file from an Apple computer to a PC, you would want to Clear the high bit to obtain standard text rather than graphics characters.

End of Line

End of Line lets you choose what line terminator is to be used for the destination when transferring text files.   The line terminators may be:

- No Change (no end of line modifications)
- Carriage Return
- Line Feed
- Carriage Return/Line Feed

Hex Dump

Hex Dump, if checked, will cause the source file to be converted to a displayable hexadecimal dump format.

Each line will display the 8-character hexadecimal address of the position in the file followed by a colon, 16 data characters from the source file in hexadecimal format, and the ASCII equivalent displayable characters.   Non-displayable character codes will be shown as a period.

This option is extremely useful in debugging communications problems when interacting with a host computer system.

Important: If the Hex Dump option is checked, all other editing options except for the High Bit option, and the End of Line option when the transfer is to a printer, are ignored.

Pad Blank Lines

Some host systems throw away any blank lines;   that is, lines consisting only of a line terminator character, such as a Carriage Return + Line Feed used to double-space between paragraphs of a document.   To have the document retain its format when it is transferred to the host, check the Pad Blank Lines option.   This will substitute a space plus the line terminator for any line containing only a line terminator.

Space Compress

Space Compress, if checked, will cause any sequence of multiple space characters to be changed to a single space character as the source file is transferred to the destination.

Translate Characters

Translate is used to convert characters or ranges of characters to other characters or strings of characters.   This option is useful if a file contains unwanted formatting characters which must be converted before the data can be processed.

Application: Some word processors use non-standard control sequences for format control.   If you know what these codes are, you can translate them to the codes used by your word processing program.

The Translate string entry field may contain multiple arguments which may be optionally separated by spaces or commas (,), or ranges separated by a hyphen (-).   Arguments in the Translate field must be specified in pairs so that both a from and a to argument are included for each translate entry in the field. Character arguments and ranges may be specified in either ASCII or hexadecimal characters in the range $00-$7F.   A hexadecimal character is indicated by a **$** followed by 2 digits in the range 0-9 or A-F.

The backslash character (\) is used to indicate that the next character has no special interpretation.   It may be used with a space, comma, hyphen, dollar sign, and backslash to allow these characters to be used in arguments.

The following are examples of valid arguments in the Translate edit option field:

```
 Argument   Function

 A          Single ASCII Character
 $41        Single Hexadecimal Character
 a-z        ASCII Character Range
 $61-$7A    Hexadecimal Character Range
 \,         Comma as Argument
```

The following are examples of valid specifications for Translate:

```
 a-z,A-Z $7F,$20 (,[ ),]
```

This string, if used in the Translate edit option field, will convert lowercase to uppercase and convert all DEL ($7F) characters to a space ($20), and will convert parenthesis ( ) to square brackets [ ].   Arguments in the Translate field must be specified in pairs.

Remove Characters

Remove is used to remove selected characters and ranges of characters from the source file as the file is written to the destination.   This option is useful if a file contains unwanted formatting characters which must be removed before the data can be processed.

Application: Some word processors use non-standard control sequences for format control.   If you know what these codes are, you can remove them to get a destination file that is readable.

The Remove string entry field may contain multiple arguments which may be optionally separated by spaces or commas (,), or ranges separated by a hyphen (-).   Character arguments and ranges may be specified in either ASCII or hexadecimal characters in the range $00-$7F.   A hexadecimal character is indicated by a **$** followed by 2 digits in the range 0-9 or A-F.

The backslash character (\) is used to indicate that the next character has no special interpretation.   It may be used with a space, comma, hyphen, dollar sign, and backslash to allow these characters to be used in arguments.

The following are examples of valid arguments in the Remove edit option field:

```
Argument  Function

A         Single ASCII Character
$41       Single Hexadecimal Character
a-z       ASCII Character Range
$61-$7A   Hexadecimal Character Range
\,        Comma as Argument
```

The following is an example of a valid specification for Remove:


```
$00-$08 $0B $0E-$1F
```

This string, if used in the Remove edit option field, will remove control characters **except** for HT ($09), LF ($0A), FF ($0C), and CR ($0D).

Tab Length

This option accepts values in the range 0-9 and defaults to 0, which disables this option. This option will substitute an appropriate number of spaces for tab characters in the source file.

Application: If you downloaded a file that you knew was written with tab stops set every 8 columns, and you wanted it to retain its format for your text editor, you could change the default 0 to 8

Retries

Specify the maximum retry count for error conditions.   Possible error conditions include timeouts and block check errors.   If an error condition occurs during a file transfer operation and the Retries count is exhausted, a Line Failure message will be displayed on your screen.   This parameter accepts values from 0 to 255.

Receive Acknowledgment Timeout

This parameter sets the number of seconds before a transfer operation will cancel when an acknowledgement for data transmitted to the host is expected to be received.   Valid values are from 0 to 65535.

Send Character Transmission Delay

Note: This also is called Transmit Delay.

Character Transmission Delay is specified in milliseconds of delay between characters, from 0 through 255.   Many host computers expect to receive data at manual typing speed.   When Softerm transmits a file of data, the interval between characters is much shorter than when they are typed, and the host computer may be unable to keep up with the transmission rate.   As a result, data may be lost or garbled. This parameter introduces an inter-character delay to reduce the host processing load.   If the data received by the host is incomplete or consistently incorrect, increasing the inter-character delay may improve the situation.

Retries

Specify the maximum retry count for error conditions.   Possible error conditions include timeouts and block check errors.   If an error condition occurs during a file transfer operation and the Retries count is exhausted, a Line Failure message will be displayed on your screen.   This parameter accepts values from 0 to 255.

Host Command for Send

A string of up to 35 characters may be entered to be transmitted to the remote system when the Send command is processed.

This string could be used as a command to the remote computer system to prepare to receive data, and might resemble:

```
 ACCEPT filename [CR]
 kermit -r filename [CR]
 XRCV filename [CR]
```

The first 32 ASCII characters (0 through 31) also are control codes which can be included by using the appropriate acronym enclosed in square brackets ([ ]).   These are listed in the ASCII column in ASCII Character Codes   (If you need to send a '[' or ']', precede it with a tilde '~'.)   For example:

```
 Acronym    Decimal Value   Name

 [NUL]             0         Null character
 [CR]             13         Carriage Return
 [ESC]            27         Escape
 [US]             31         Unit Separator
```

The string is transmitted exactly as entered and must include any terminator characters, such as a carriage return, required by the remote computer.

The string is transmitted at 5 characters per second to allow for systems which expect commands to be entered at normal keyboard entry speeds.

Receive Data Timeout

This parameter sets the number of seconds before a transfer operation will cancel when data is expected to be received. Valid values are from 0 to 65535.

Receive Character Transmission Delay

Note: This also is called Transmit Delay.

Character Transmission Delay is specified in milliseconds of delay between characters, from 0 through 255.   Many host computers expect to receive data at manual typing speed.   When Softerm transmits a file of data, the interval between characters is much shorter than when they are typed, and the host computer may be unable to keep up with the transmission rate.   As a result, data may be lost or garbled. This parameter introduces an inter-character delay to reduce the host processing load.   If the data received by the host is incomplete or consistently incorrect, increasing the inter-character delay may improve the situation.

Retries

Specify the maximum retry count for error conditions.   Possible error conditions include timeouts and block check errors.   If an error condition occurs during a file transfer operation and the Retries count is exhausted, a Line Failure message will be displayed on your screen.   This parameter accepts values from 0 to 255.

Host Command for Receive

A string of up to 35 characters may be entered to be transmitted to the remote system when the Receive command is processed.

When used with Receive, this string could be used as a command to the remote computer system to prepare to transmit data, and might resemble:

```
TYPE filename [CR]
kermit -s filename [CR]
YSEND filename [CR]
```

The first 32 ASCII characters (0 through 31) also are control codes which can be included by using the appropriate acronym enclosed in square brackets ([ ]).   These are listed in the ASCII column in ASCII Character Codes   (If you need to send a '[' or ']', precede it with a tilde '~'.)   For example:

```
Acronym     Decimal Value   Name

[NUL]             0         Null character
[CR]             13         Carriage Return
[ESC]            27         Escape
[US]             31         Unit Separator
```

The string is transmitted exactly as entered and must include any terminator characters, such as a carriage return, required by the remote computer.

The string is transmitted at 5 characters per second to allow for systems which expect commands to be entered at normal keyboard entry speeds.

Help for Character Protocol Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Send Character Transmission Delay
End of Block String
End of Block Delay
Block Size
Acknowledgement String
Termination String
Echo/Wait Enabled
When Received
Reply With
Terminate On String
Host Command for Send

Help for Character Protocol Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Character Transmission Delay
Receive Data Timeout
When Received
Reply With
Terminate On String
Host Command for Receive

End of Block String

Specify an up to 4-character block termination string.   In character mode, a block is usually considered to be a line of text, whose terminator is a carriage return, a linefeed or a carriage return/linefeed combination.   However, the string may be composed of any characters that comprise the end of a logical block of data.

Note: Specifying a string here enables the Acknowledge and End of Block Delay features.

End of Block Delay

End of Block Delay is specified in tenths of seconds, from 0 through 255.   If no Host Acknowledge string is available, this option, together with the End of Block (EOB) field, can be used to implement a time delay flow control.   After each block of characters is transmitted, Softerm pauses for the period of time indicated by this field before continuing transmission with the next block of characters.

Block Size

The Block Size accepts values in the range 0 to 255 and specifies the maximum number of characters to be transmitted before waiting for a specified Acknowledge string.   When the number of characters specified by the Block Size has been transmitted without encountering an End of Block terminator, the End of Block terminator (if it has been specified) will be transmitted and Softerm will wait for the optional Acknowledge string to be received.

Acknowledgement String

This 4-character string field specifies the host computer response to each block transmitted.   It should be set to whatever character string the host sends when it is ready to receive a block of characters. Together with the End of Block field, this field is used to implement a prompting flow control.   After each block of characters is transmitted, Softerm will wait for this string to be received before sending the next block.   If either of the Acknowledge or End of Block fields are left blank, Softerm does not wait for a host response.

Termination String

This 35-character string field is used to specify the string which, when sent, indicates to the host system that data transmission is complete.   After receiving this string, the host system stops its receive operation, the file is closed, and Softerm returns to Online operation.   If there is no unique string which the host recognizes as the end of the data, leave this field blank.

Echo / Wait Enabled

This option allows the echo back of each transmitted character to Acknowledge the character transmitted. If checked, the program waits after each character is transmitted until the same character is received.   All other characters are ignored.   If the required character is not received within the specified Timeout period, the transfer is canceled.

When Received

Note: The When Received string is used with the Reply With string.

When Received is a 10-character string field that specifies the prompting message which is sent by the host.   Reply With specifies a string to send in reply.

Some host computers page their output, sending only enough data to fit on a single screen, and then send a message to indicate the presence or absence of more data.   When a character is sent to the host, it responds with another page of data, if it exists. The When Received and Reply With fields are used in this situation to acknowledge each screen of data and prompt for the next screen.

Reply With

Note: The Reply With string is used with the When Received string.

Reply With is a 10-character string field that specifies a string to send in reply to the When Received string.

Some host computers page their output, sending only enough data to fit on a single screen, and then send a message to indicate the presence or absence of more data.   When a character is sent to the host, it responds with another page of data, if it exists. The When Received and Reply With fields are used in this situation to acknowledge each screen of data and prompt for the next screen.

Terminate On String

This 35-character string field is used to specify the string which, when received, indicates that data reception is complete. After receiving this string, the receive operation terminates, the receive file is closed, and Softerm returns to Online operation.   If there is no unique string which signals the end of the data, leave this field blank.

Help for Kermit Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Kermit Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Receive Character Transmission Delay
Host Command for Receive

Help for Kermit Protocol Settings

These settings are applicable to any file transfer operation using the Kermit Protocol.

For additional information, select:

Retries
Start of Message Character
Leading Pad Count
Leading Pad Character
Trailing Pad Character
Repeat Quoting Character
Force 8-Bit Quoting
Send Kermit Finish Packet

Help for Kermit Server Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Kermit Server Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Receive Character Transmission Delay
Host Command for Receive

Help for Kermit Server Protocol Settings

These settings are applicable to any file transfer operation using the Kermit Server Protocol.

For additional information, select:

[Retries](#)
[Start of Message Character](#)
[Leading Pad Count](#)
[Leading Pad Character](#)
[Trailing Pad Character](#)
[Repeat Quoting Character](#)
[Force 8-Bit Quoting](#)
[Send Kermit Finish Packet](#)

Start of Message Character

This parameter sometimes is called the Start-Of-Header (SOH) character.   This parameter accepts values from [NUL] through [RUB].

The default Start of Message character is [SOH], which is 01 Hex.

Note: Use the text string displayed in the ASCII column of <u>ASCII Character Codes</u>.

Leading Pad Count

You may specify the number of padding characters to precede each packet.   Padding may be necessary when sending to a half duplex system that requires some time to change the direction of transmission.

Note: In general practice, this situation is more commonly handled by a "handshake" mechanism.

This parameter accepts values from 0 through 255.

Leading Pad Character

Note: If the Leading Pad Count parameter is 0 (zero), this parameter will be ignored.

If the Leading Pad Count parameter is not 0 (zero), this parameter can be set to the control character to be used for padding.   In most systems, this character is [NUL] (0 Hex), although some systems use [RUB] (7F Hex).

This parameter accepts values from [NUL] through [RUB].

Note: Use the text string displayed in the ASCII column of ASCII Character Codes.

Trailing Pad Character

This sometimes is called the End-Of-Line character.   It is the character which causes the host to accept a line of data.   This parameter defaults to [CR] (0D Hex) because most systems that require a line terminator for terminal input accept the carriage return character for this purpose.   This parameter accepts values from [NUL] through [RUB].

Note: Use the text string displayed in the ASCII column of <u>ASCII Character Codes</u>.

Repeat Quoting Character

This option lets you change the default repeat sequence introducer character.   The default introducer character is a tilde (~).

The Kermit protocol allows the sender and receiver to exchange packets during initialization to agree upon the capabilities to be used during the data transfer phase.   In the case of repeat quoting (data compression), the file sender specifies the character to be used as a repeat sequence introducer and the receiver either agrees or disagrees.   If the character specified by the sender is not acceptable to the receiver, repeat quoting will not be done.

Force 8-Bit Quoting

Quoting (also called Prefixing) is a term used by Kermit to indicate that 8-bit data is transmitted as two 7-bit characters. For instance, the standard ASCII characters are 7-bit data, while many non-printing characters, such as those forming binary executable files, use 8-bit data.   8-bit data is encoded into two 7-bit characters at the sending end, and decoded back to one 8-bit character at the receiving end.

This option is provided for use in network environments where intermediate equipment does not pass on the most significant bit (that is, it does not pass 8-bit characters along in an unmodified form).

If this parameter is checked, encoding of data greater than 07F hex is to be forced.   If this parameter is not checked, the Kermit protocol initial packet exchange will determine whether encoding of 8-bit data is to be performed.

Send Kermit Finish Packet

When checked, this option will cause a Kermit finish packet to be transmitted at the end of a transmit/receive file(s) operation to cause the remote kermit server program to terminate (if it supports this packet type).

Help for Softrans Protocol Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Retries
End of Message Character
Transmit Buffer Size
Host Command for Send

Help for Softrans Protocol Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Receive Character Transmission Delay
End of Message Character
Host Command for Receive

End of Message Character

Specify the character which is used to terminate input at the remote system.   It is designed primarily for host systems which work on a line input basis.   This parameter defaults to [CR] (carriage return).

Note: Use the text string displayed in the ASCII column of <u>ASCII Character Codes</u>.

Transmit Buffer Size

This parameters accepts values from 64 through 255 and defaults to 128.   It specifies the size, in bytes, of the buffer the Softrans file transfer protocol builds and sends to the host system.   If your host can accept more data at a time, set this to a higher value.   If your host cannot accept 128 bytes at a time, set this to a lower value.   Check with your system administrator.

Note: When receiving data to your PC, Softrans can accept whatever is sent by the host.

Help for Xmodem Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Xmodem Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command for Receive

Help for Xmodem(1K) Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Xmodem(1K) Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command for Receive

Help for Ymodem Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Ymodem Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command for Receive

Help for Ymodem(1K) Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Ymodem(1K) Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command for Receive

Help for Ymodem-G Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Ymodem-G Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command for Receive

Help for Ymodem-G(1K) Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command for Send

Help for Ymodem-G(1K) Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command for Receive

Help for Zmodem Send Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Retries
Transmit Packet Size
Host Command for Send

Help for Zmodem Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Receive Character Transmission Delay
Retries
Host Command for Receive

Transmit Packet Size

This parameter determines the number of bytes contained by each packet of data. Set it to the size supported by the host (if you know what it is) or to Auto.

If set to Auto, the packet size is determined by the speed of the connection.   The faster the speed, the larger will be the packet size.

Help for VM/CMS Send Setting

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command

Help for VM/CMS Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command

Help for VM/CMS Protocol Settings

These settings are applicable to any file transfer operation using the Ind$File VM/CMS protocol.

For additional information, select:

Append to Target File
ASCII To / From EBCDIC Translation
Use CR/LF As Record Separator
One-to-One Character Mapping

Help for VM/CMS Host File Characteristics

In general, the preset values will be correct but might need to be modified temporarily to meet a particular requirement.   Setting these parameters does require familiarity with the host's requirements.

For additional information, select:

PC File Code Page
Host File Code Page
Logical Record Length
Record Format

Help for MVS/TSO Send Setting

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command

Help for MVS/TSO Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command

Help for MVS/TSO Protocol Settings

These settings are applicable to any file transfer operation using the Ind$File MVS/TSO protocol.

For additional information, select:

Append to Target File
ASCII To / From EBCDIC Translation
Use CR/LF As Record Separator
One-to-One Character Mapping

Help for MVS/TSO Host File Characteristics

In general, the preset values will be correct but might need to be modified temporarily to meet a particular requirement.   Setting these parameters does require familiarity with the host's requirements.

For additional information, select:

PC File Code Page
Host File Code Page
Logical Record Length
Record Format
Units for Space Allocation
Quantity
Increment
Block Size
Average Block Size

Help for CICS Send Setting

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to send a file to the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Acknowledgment Timeout
Send Character Transmission Delay
Host Command

Help for CICS Receive Settings

This dialog lets you set and change protocol-specific options which will be in effect whenever you use this File Transfer Profile to receive a file from the host system.

These settings can be changed "on-the-fly" before you start the file transfer from the Session Window's **File** menu.

For additional information, select:

Receive Data Timeout
Host Command

Help for CICS Protocol Settings

These settings are applicable to any file transfer operation using the Ind$File CICS protocol.

For additional information, select:

ASCII To / From EBCDIC Translation
Use CR/LF As Record Separator
One-to-One Character Mapping

Help for CICS Host File Characteristics

In general, the preset values will be correct but might need to be modified temporarily to meet a particular requirement.   Setting these parameters does require familiarity with the host's requirements.

For additional information, select:

PC File Code Page
Host File Code Page

Help for IBM 7171 Mod 1 Key Definitions

Note: You can press F1 at each field to see what the default value is.   Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

This dialog lists the current key sequences assigned to each function.   Make changes as necessary.

Help for IBM 9370 ASCII Subsystem Key Definitions

Note: You can press F1 at each field to see what the default value is.   Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

This dialog lists the current key sequences assigned to each function.   Make changes as necessary.

Help for IBM 3708 Key Definitions

Note: You can press F1 at each field to see what the default value is.   Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

This dialog lists the current key sequences assigned to each function.   Make changes as necessary.

Help for IBM 3174 w/3020 Key Definitions

Note: You can press F1 at each field to see what the default value is.   Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

This dialog lists the current key sequences assigned to each function.   Make changes as necessary.

Help for IBM S/1 Yale IUP Key Definitions

Note: You can press F1 at each field to see what the default value is.   Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

This dialog lists the current key sequences assigned to each function.   Make changes as necessary.

Host Command for Send and Receive

This field is optional and defines a string which will be transmitted to the host before starting a transfer.

Important: This defaults to IND$FILE, which is the standard name of the file transfer program on the host.   If the host's file transfer program has a different name, enter it here.   No other information should be entered.

Append to Target File

When sending files to the host, if this option is checked, a file of the same name will be appended to the file already on the host.   If the file does not already exist on the host, it will be created.   If this option is not checked, transferring a file to the host will cause it to replace a file of the same name.

This is a commonly-used option.

ASCII To / From EBCDIC Translation

If this option is checked, it specifies that the file data is standard text.   When the data is sent from the PC to the host, it is converted from ASCII to EBCDIC characters.   When the data is received by the PC from the host, it is converted from EBCDIC to ASCII characters.

This commonly-used option often is used with the Use CR/LF option.

Use CR/LF As Record Separator

On a Send operation, checking this option causes carriage return/line feed characters to mark the ends of logical records at the host end.   These characters are not written to the host file.

On a Receive operation, checking this option causes carriage return/line feed characters to be inserted at the end of logical records.   Trailing blanks are removed.

This option commonly is used with the ASCII option.

One-to-One Character Mapping

Note: This option is valid only if the ASCII option also is specified. This option normally should not be specified.

If One-to-One is checked, the file transfer function will use one-to-one character mapping, which will map each unmatched code point to a unique character in the target code page. With one-to-one character mapping, a file transferred to a specific host and then transferred back from that host will be identical to the original file transferred to the host.

If One-to-One is not checked, the file transfer function will use multiple-substitute mapping. The file transfer will map all unmatched code points to a specific set of characters in the target code page to enhance comprehension. With multiple-substitute mapping, a file transferred to a specific host and then transferred back to the PC will not be identical to the original file transferred to the host (code points which did not have a match in the target file will be different).

Note: The settings for these options are dependent entirely upon the host's capabilities and requirements and the user's requirements.

PC File Code Page

Note: This option is valid only if the ASCII to/from EBCDIC Translation option also is checked.

This specifies the PC file code page which is to be used for the file being transferred. The default value is code page 437, United States.

Host File Code Page

Note: This option is valid only if the ASCII to/from EBCDIC Translation option also is checked.

This option specifies the host file code page which is to be used for the file being transferred.   The default value is code page 037, USA/Canada/Netherlands/Portugal.

Logical Record Length

This specifies the logical record length of the host file in number of characters.   If this parameter is not used, the host defaults will be used.   For new files, the host usually will use a default value of 80.   This parameter normally can be omitted and should be specified only when you are familiar with the host file operations.

Record Format

This option may be set to Default, Variable, or Fixed. The default value for fixed-length records is 80, but this may be changed using the Logical Record Length option.

If set to Variable, host record boundaries will be set by the carriage return/line feed characters in the PC file being sent. This is the default setting for VM/CMS hosts.

Record Format

This option may be set to Default, Variable, or Fixed.   The default value for fixed-length records is 80, but this may be changed using the Logical Record Length option.

If set to Variable, host record boundaries will be set by the carriage return/line feed characters in the PC file being sent. This is the default setting for VM/CMS hosts.

Record Format

This option may be set to Default, Variable, or Fixed.   The default value for fixed-length records is 80, but this may be changed using the Logical Record Length option.

If set to Variable, host record boundaries will be set by the carriage return/line feed characters in the PC file being sent. This is the default setting for VM/CMS hosts.

Logical Record Length

This specifies the logical record length of the host file in number of characters.   If this parameter is not used, the host defaults will be used.   For new files, the host usually will use a default value of 80.   This parameter normally can be omitted and should be specified only when you are familiar with the host file operations.

Record Format

This option may be set to Default, Variable, Fixed, or Undefined. The default value for fixed-length records is 80, but this may be changed using the Logical Record Length option.

If set to Variable, host record boundaries will be set by the carriage return/line feed characters in the PC file being sent. This is the default setting for VM/CMS hosts.

Record Format

This option may be set to Default,Variable, Fixed, or Undefined. The default value for fixed-length records is 80, but this may be changed using the Logical Record Length option.

If set to Variable, host record boundaries will be set by the carriage return/line feed characters in the PC file being sent. This is the default setting for VM/CMS hosts.

Record Format

This option may be set to Default,Variable, Fixed, or Undefined. The default value for fixed-length records is 80, but this may be changed using the Logical Record Length option.

If set to Variable, host record boundaries will be set by the carriage return/line feed characters in the PC file being sent. This is the default setting for VM/CMS hosts.

Record Format

This option may be set to Default,Variable, Fixed, or Undefined. The default value for fixed-length records is 80, but this may be changed using the Logical Record Length option.

If set to Variable, host record boundaries will be set by the carriage return/line feed characters in the PC file being sent. This is the default setting for VM/CMS hosts.

Units for Space Allocation

This option, which is applicable only in the MVS/TSO environment, determines the amount of space to be allocated for a new data set based on the unit used for Quantity and Increment.   The available units are Default, Cylinders, Tracks and Average Blocks.   If Default is selected, the host system defaults to a value based on the Block Size of Host File setting.

Units for Space Allocation

This option, which is applicable only in the MVS/TSO environment, determines the amount of space to be allocated for a new data set based on the unit used for Quantity and Increment.   The available units are Default, Cylinders, Tracks and Average Blocks.   If Default is selected, the host system defaults to a value based on the Block Size of Host File setting.

Units for Space Allocation

This option, which is applicable only in the MVS/TSO environment, determines the amount of space to be allocated for a new data set based on the unit used for Quantity and Increment.   The available units are Default, Cylinders, Tracks and Average Blocks.   If Default is selected, the host system defaults to a value based on the Block Size of Host File setting.

Units for Space Allocation

This option, which is applicable only in the MVS/TSO environment, determines the amount of space to be allocated for a new data set based on the unit used for Quantity and Increment.   The available units are Default, Cylinders, Tracks and Average Blocks.   If Default is selected, the host system defaults to a value based on the Block Size of Host File setting.

Quantity

This field, which is applicable only in the MVS/TSO environment, accepts numeric entries in the range 0 through 99999.

Increment

This field, which is applicable only in the MVS/TSO environment, accepts numeric entries in the range 0 through 999.

Block Size

This field accepts numeric entries in the range 0 through 32760. This option is not commonly used and defaults to 0, meaning that when creating a new data set, its block size will equal its record length.

A value, which is applicable only in the MVS/TSO environment, entered for this option determines the block size for a new sequential data set on the TSO volume.

Average Block Size

This field accepts values in the range 0 through 32760 and specifies the average block length in bytes of the records that will be written to the host data set.

Enter Function Definition

Note: Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1: [BS]
IBM 9370        : [BS]
IBM 3708        : [CR]
IBM 3174 w/3020 : [CR]
IBM S/1 Yale IUP: [BS]
IBM Info Network: [BS]
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [CR]
IBM 9370        : [CR]
IBM 3708        : [CR]
IBM 3174 w/3020 : [CR]
IBM S/1 Yale IUP: [CR]
IBM Info Network: [CR]
```

Clear Function Definition

Note: Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1 : [ESC]L
IBM 9370         : [ESC]L
IBM 3708         : [ETX]
IBM 3174 w/3020  : [ETX]
IBM S/1 Yale IUP : [ESC][ESC]L
IBM Info Network : [ESC]L
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [ESC]OM
IBM 9370        : [ESC]OM
IBM 3708        : [ETX]
IBM 3174 w/3020 : [ETX]
IBM S/1 Yale IUP: [ESC]OP[ESC]OM
IBM Info Network: [ESC]Op
```

PF1 Function Definition

Note: Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1: [ESC]J1
IBM 9370        : [ESC]J1
IBM 3708        : [ESC]1
IBM 3174 w/3020 : [ESC]1
IBM S/1 Yale IUP: [ESC]J1
IBM Info Network: [ESC]1
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [ESC]1
IBM 9370        : [ESC]1
IBM 3708        : [ESC]1
IBM 3174 w/3020 : [ESC]1
IBM S/1 Yale IUP: [ESC]1
IBM Info Network: [ESC]1
```

PF2 Function Definition

Note: Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1: [ESC]J2
IBM 9370        : [ESC]J2
IBM 3708        : [ESC]2
IBM 3174 w/3020 : [ESC]2
IBM S/1 Yale IUP: [ESC]J2
IBM Info Network: [ESC]2
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [ESC]2
IBM 9370        : [ESC]2
IBM 3708        : [ESC]2
IBM 3174 w/3020 : [ESC]2
IBM S/1 Yale IUP: [ESC]2
IBM Info Network: [ESC]2
```

PA2 Function Definition

Note: Please refer to the ASCII Character Codes if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1: [ESC]J.
IBM 9370        : [ESC]J.
IBM 3708        : [ESC].
IBM 3174 w/3020 : [ESC].
IBM S/1 Yale IUP: [ESC]J.
IBM Info Network: [ESC].
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [ESC].
IBM 9370        : [ESC].
IBM 3708        : [ESC].
IBM 3174 w/3020 : [ESC].
IBM S/1 Yale IUP: [ESC].
IBM Info Network: [ESC].
```

Home Function Definition

Note: Please refer to the ASCII Character Codes if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1: [ESC]H
IBM 9370        : [ESC]H
IBM 3708        : [ESC]H
IBM 3174 w/3020 : [ESC]H
IBM S/1 Yale IUP: [ESC]H
IBM Info Network: [ESC]H
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [BS]
IBM 9370        : [BS]
IBM 3708        : [ESC]H
IBM 3174 w/3020 : [ESC]H
IBM S/1 Yale IUP: [BS]
IBM Info Network: [BS]
```

Backtab Function Definition

Note: Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1: [ESC]J[HT]
IBM 9370        : [ESC]J[HT]
IBM 3708        : [STX]
IBM 3174 w/3020 : [STX]
IBM S/1 Yale IUP: [ESC]J[HT]
IBM Info Network: [ESC][HT]
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [ESC][ESC]OD
IBM 9370        : [ESC][ESC]OD
IBM 3708        : [BS]
IBM 3174 w/3020 : [BS]
IBM S/1 Yale IUP: [ESC]J[HT]
IBM Info Network: [ESC][HT]
```

Erase to EOF Function Definition

Note: Please refer to the <u>ASCII Character Codes</u> if you need to convert among mnemonic, decimal and hexadecimal values.

The following are the default values when used with the IBM 3101-20 emulation:

```
IBM 7171 Model 1: [ESC]I
IBM 9370        : [ESC]I
IBM 3708        : [ESC]I
IBM 3174 w/3020 : [ESC]I
IBM S/1 Yale IUP: [ESC]I
IBM Info Network: [ESC]I
```

The following are the default values when used with the DEC VT100 emulation:

```
IBM 7171 Model 1: [ESC][RUB]
IBM 9370        : [ESC][RUB]
IBM 3708        : [ENQ]
IBM 3174 w/3020 : [ENQ]
IBM S/1 Yale IUP: [ESC][RUB]
IBM Info Network: [ESC][RUB]
```

Help for Send File Dialog

Complete this dialog and choose Send to transfer files from this computer to the host computer system.

The file transfer protocol settings and the File Transfer Edit Options can be examined and changed by choosing Manage.

If the appropriate profiles have been created, you can select a different file transfer protocol.

For more information, select:

File Transfer Name
Edit Options
PC File Name
Drive
Files
Directory
Host File Name
Transmit to Host
Send Transfer Status
Stop Transfer

Help for Receive File Dialog

Complete this dialog and choose Receive to transfer files from the host computer system to this computer.

The file transfer protocol settings and the File Transfer Edit Options can be examined and changed by choosing Manage.

If the appropriate profiles have been created, you can select a different file transfer protocol.

For more information, select:

File Transfer Name
Edit Options
Host File Name
Drive
Directory
PC File Name
If File Exists
Transmit to Host
Receive Transfer Status
Stop Transfer

Cancel File Transfer

Cancel this dialog and return to the terminal emulation display.

Send

When all fields are correct, choose Send to start the file transfer.

Receive

When all fields are correct, choose Receive to start the file transfer.

File Transfer Name

The displayed name defaults to the profile linked to this Session.   The drop-down list box shows the names of any other existing File Transfer Profiles.   Select the Profile you want to use for this operation.

Note: If a File Transfer Profile has not been linked to this session, this field defaults to the first File Transfer Profile found in the data base file.

To examine or change the protocol-specific options or the File Transfer Edit Options, choose Change.

PC File Name

If you know the name of the file you want to send and it is located in the current directory, or in another directory whose path name you know, type the path (if required) and name.

If you do not know the exact path and filename, use the Drive, Files and Directory options to locate and select the file you wish to transfer.   Once selected, the file name and path will appear in this field.

Note: If you are connected to a Unix host, file names are case-sensitive.

Drive

If you do not know the exact path and filename, use the Drive, Files and Directory options to locate and select the file you wish to transfer.

Directory

If you do not know the exact path and filename, use the Drive, Files and Directory options to locate and select the file you wish to transfer.

Files

If you do not know the exact path and filename, use the Drive, Files and Directory options to locate and select the file you wish to transfer.

Host File Name (Send)

You can rename a file as it is transferred.

If a different name is not provided, the file will have the same name at its destination.

Note: If you are connected to a Unix host, file names are case-sensitive.

Transmit to Host

This field is optional.

A string of up to 35 characters may be entered to be transmitted to the remote system when the SEND command is processed.   This string could be used as a command to the remote computer system to prepare to receive data.

For more information, select:

Host Command for Send

Change

To examine or change the protocol-specific options or the File Transfer <u>Edit Options</u>, choose Change.

File Transfer Name

The displayed name defaults to the profile linked to this Session.   The drop-down list box shows the names of any other existing File Transfer Profiles.   Select the Profile you want to use for this operation.

Note: If a File Transfer Profile has not been linked to this session, this field defaults to the first File Transfer Profile found in the data base file.

To examine or change the protocol-specific options or the File Transfer <u>Edit Options</u>, choose Change.

Host File Name (Receive)

Type the name of the file you want to receive.

Note: If you are connected to a Unix host, file names are case-sensitive.

Drive

If necessary, select the drive to which to write the data.

Directory

If necessary, select the directory to which to write the data.

If File Exists

If a file with the name you have assigned already exists on your PC, you can specify that you want the received file to:

Resume the transfer (if using Zmodem);
Replace the existing file;
Append to the end of the existing file;   or
Stop transfer.   Stop is the default value.

If File Exists

If a file with the name you have assigned already exists on your PC, you can specify that you want the received file to:

> Resume the transfer (if using Zmodem);
> Replace the existing file;
> Append to the end of the existing file;   or
> Stop transfer.   Stop is the default value.

If File Exists

If a file with the name you have assigned already exists on your PC, you can specify that you want the received file to:

> Resume the transfer (if using Zmodem);
> Replace the existing file;
> Append to the end of the existing file;   or
> Stop transfer.   Stop is the default value.

If File Exists

If a file with the name you have assigned already exists on your PC, you can specify that you want the received file to:

Resume the transfer (if using Zmodem);
Replace the existing file;
Append to the end of the existing file;   or
Stop transfer.   Stop is the default value.

PC File Name

If you want the file to have a different name on your PC, type the new name here.   If you leave this field blank, the file will have the same name as that specified in the Receive File Name field.

Transmit to Host

This field is optional.

A string of up to 35 characters may be entered to be transmitted to the remote system when the RECEIVE command is processed.   This string could be used as a command to the remote computer system to prepare to transmit data.

For more information, select:

Host Command for Receive

Change

To examine or change the protocol-specific options or the File Transfer <u>Edit Options</u>, choose Change.

Help for Send Transfer Status

The Status window shows several parameters, such as the Session name;   the File Transfer Profile name;   the PC file name;   the Host file name; and the Status of the operation.   The Status includes the number of errors (if any) and the number of characters sent.

To stop the file transfer operation, choose Stop Transfer.

To perform another task while the transfer is in progress, use any of the task switching mechanisms supported by the operating system.

Help for Receive Transfer Status

The Status window shows several parameters, such as the Session name;   the File Transfer Profile name;   the PC file name;   the Host file name; and the Status of the operation.   The Status includes the number of errors (if any) and the number of characters received.

To stop the file transfer operation, choose Stop Transfer.

To perform another task while the transfer is in progress, use any of the task switching mechanisms supported by the operating system.

Stop Transfer

Stop the transfer and return to the emulation screen.

ASCII Character Codes

These characters, codes and functions can be inserted in many of Softerm's string entry fields. The first 32 codes (0 through 31 decimal), also called the non-displayable characters, often are used as control codes. They can be entered in a text field by typing the code's acronym (listed in the ASCII column) between square brackets.

For example, a Carriage Return can be included in a string by typing the acronym and placing it between square brackets, such as:

        [CR]

Hex	Dec	ASCII	Name	Keyboard
00	0	[NUL]	null	Ctrl
01	1	[SOH]	start heading	Ctrl A
02	2	[STX]	start text	Ctrl B
03	3	[ETX]	end text	Ctrl C
04	4	[EOT]	end transmission	Ctrl D
05	5	[ENQ]	enquire	Ctrl E
06	6	[ACK]	acknowledge	Ctrl F
07	7	[BEL]	bell	Ctrl G
08	8	[BS]	backspace	Ctrl H
09	9	[HT]	horizontal tab	Ctrl I
0A	10	[LF]	line feed	Ctrl J
0B	11	[VT]	vertical tab	Ctrl K
0C	12	[FF]	form feed	Ctrl L
0D	13	[CR]	carriage return	Ctrl M
0E	14	[SO]	shift out	Ctrl N
0F	15	[SI]	shift in	Ctrl O
10	16	[DLE]	data link escape	Ctrl P
11	17	[DC1]	device control 1	Ctrl Q
12	18	[DC2]	device control 2	Ctrl R
13	19	[DC3]	device control 3	Ctrl S
14	20	[DC4]	device control 4	Ctrl T
15	21	[NAK]	negative ack	Ctrl U
16	22	[SYN]	synchronous idle	Ctrl V
17	23	[ETB]	end trans block	Ctrl W
18	24	[CAN]	cancel	Ctrl X
19	25	[EM]	end medium	Ctrl Y
1A	26	[SUB]	substitute	Ctrl Z
1B	27	[ESC]	escape	Esc
1C	28	[FS]	file separator	Ctrl \
1D	29	[GS]	group separator	Ctrl]
1E	30	[RS]	record separator	Ctrl ^
1F	31	[US]	unit separator	Ctrl _
20	32		space	Space Bar
21	33	!	exclamation	!
22	34	"	quotation	"
23	35	#	number sign	#
24	36	$	dollar sign	$
25	37	%	percent sign	%
26	38	&	ampersand	&
27	39	'	apostrophe	'
28	40	(	open parenthesis	(
29	41	)	close parenthesis	)

```
2A    42        *        asterisk              *
2B    43        +        plus sign             +
2C    44        ,        comma                 ,
2D    45        -        minus                 -
2E    46        .        period                .
2F    47        /        slash                 /
30    48        0        zero                  0
31    49        1        one                   1
32    50        2        two                   2
33    51        3        three                 3
34    52        4        four                  4
35    53        5        five                  5
36    54        6        six                   6
37    55        7        seven                 7
38    56        8        eight                 8
39    57        9        nine                  9
3A    58        :        colon                 :
3B    59        ;        semicolon             ;
3C    60        <        less than             <
3D    61        =        equal to              =
3E    62        >        greater than          >
3F    63        ?        question mark         ?
40    64        @        at sign
41    65        A        A                     A
42    66        B        B                     B
43    67        C        C                     C
44    68        D        D                     D
45    69        E        E                     E
46    70        F        F                     F
47    71        G        G                     G
48    72        H        H                     H
49    73        I        I                     I
4A    74        J        J                     J
4B    75        K        K                     K
4C    76        L        L                     L
4D    77        M        M                     M
4E    78        N        N                     N
4F    79        O        O                     O
50    80        P        P                     P
51    81        Q        Q                     Q
52    82        R        R                     R
53    83        S        S                     S
54    84        T        T                     T
55    85        U        U                     U
56    86        V        V                     V
57    87        W        W                     W
58    88        X        X                     X
59    89        Y        Y                     Y
5A    90        Z        Z                     Z
5B    91        [        open bracket          [
5C    92        \        backslash             \
5D    93        ]        close bracket         ]
5E    94        ^        circumflex            ^
5F    95        _        underscore            _
60    96        `        grave accent          `
61    97        a        a                     a
62    98        b        b                     b
```

```
63   99     c      c                  c
64   100    d      d                  d
65   101    e      e                  e
66   102    f      f                  f
67   103    g      g                  g
68   104    h      h                  h
69   105    i      i                  i
6A   106    j      j                  j
6B   107    k      k                  k
6C   108    l      l                  l
6D   109    m      m                  m
6E   110    n      n                  n
6F   111    o      o                  o
70   112    p      p                  p
71   113    q      q                  q
72   114    r      r                  r
73   115    s      s                  s
74   116    t      t                  t
75   117    u      u                  u
76   118    v      v                  v
77   119    w      w                  w
78   120    x      x                  x
79   121    y      y                  y
7A   122    z      z                  z
7B   123    {      open brace         {
7C   124    |      line               |
7D   125    }      close brace        }
7E   126    ~      tilde              ~
7F   127    [RUB]  rubout (delete)    Shift Backspace
```