

## Help Topics for DEC VT340 Terminal Emulation

[VT340 Operating Mode](#)

[VT340 Status Line Definition](#)

[Printer Definitions](#)

[Video Definitions](#)

[Keypad Modes](#)

[Break Enabled Mode](#)

[Tab Stop Settings](#)

[Answerback Message](#)

[User Preference Settings](#)

[Keyboard Dialect](#)

[Graphics Set-Up](#)

[Graphics Color Set-Up](#)

[4010 / 4014 Set-Up](#)

[Display Set-Up](#)

[Local Editing Set-Up](#)

## Help for VT340 Operating Mode

Set the operating mode to determine how the terminal responds to control sequences.

For additional information, select:

[Operating Mode](#)

[VT100 Mode Terminal ID](#)

[Controls](#)

[Online / Local](#)

## Operating Mode

The Operating Mode may be set to VT300, 7-Bit Controls; VT300, 8-Bit Controls; 4010/4014 Mode; VT52 Mode; or VT100 Mode.

VT300, 7-Bit Controls is the default mode and executes standard ANSI functions. This mode provides the full range of VT340 capabilities in an 8-bit communications environment with 7-bit controls. This mode supports the DEC multinational character set or the national replacement character (NRC) sets. These sets may be accessed from the keyboard or from the host. This mode also provides some compatibility for VT100 and VT125 software.

VT300, 8-Bit Controls also executes standard ANSI functions. This mode provides the full range of VT340 capabilities in an 8-bit communications environment with 8-bit controls. This mode also supports the DEC multinational and NRC character sets, which can be accessed from the keyboard or with programmed control codes.

VT100 Mode provides a high degree of compatibility with the DEC VT102 terminal. All data is restricted to 7 bits, and only ASCII, NRC, or special graphics characters are generated.

VT52 Mode provides compatibility with DEC's private functions and is similar to the VT100 terminal operating in VT52 mode. Only VT52 keys may be used, and all data is restricted to 7 bits and generates only ASCII, United Kingdom or special graphics characters.

4010/4014 Mode is a graphics mode which executes Tektronix 4010/4014 functions.

## **VT100 Mode Terminal ID**

This option may be set to VT340 ID, VT100 ID, VT101 ID, VT102 ID, VT220 ID, VT131 ID or VT125 ID, and selects the device attributes response required by some applications. The response lets the host know the operating characteristics of the terminal.

## **Controls**

If set to Interpret Controls, the VT340 emulation processes control characters, but does not display them.

If set to Display Controls, the emulation displays all control characters without processing them.

If set to Display ReGIS, the emulation displays ReGIS commands on the bottom line of the monitor as the graphic screens are drawn.

## **Online / Local**

If set to Online, the terminal can communicate with the host system. Data entered at the keyboard is sent to the host, and data received from the host is displayed.

If set to Local, the host system is placed on hold. Data entered at the keyboard is sent to the monitor, but not to the host.

## Help for VT340 Status Line Definition

Determine the default setting for whether or not an information status line will be displayed when in the Session Window (online terminal emulation).

If a status line is to be displayed, determine the default setting for the date and time format to be used; and determine whether the DEC VT340 Status Line or the standard Softerm Status Line will be displayed.

For additional information, select:

Status Line Preference

Display Host-Writable Status Line

Status Line Time Format

Status Line Display

## Status Line Preference

If the VT340 Status Line is selected, the status information displayed will include Row and Column, Operating Mode, 80 or 132 Column Mode, Replace or Insert mode, Printer Status, Hold indicator, Keyboard Lock indicator, and LED indicators L1, L2, L3, and L4.

The standard Softerm Status Line displays some or all of the following:

- Online or Local mode
- Connect status
- Duplex setting
- Capture status
- Caps Lock key state
- Numeric Lock key state
- Date and Time or Connect Time



## **Status Line Time Format**

### **Date/Time**

Choose this setting for the status line to display the current date and time.

### **Connect Time**

Choose this setting for the status line to display the length of time the connection has been established.

## **Status Line Display**

### **On**

The status line will be displayed when you are in the Session Window (online terminal emulation mode).

### **Off**

The status line will not be displayed when you are in the Session Window (online terminal emulation mode).

## **Display Host-Writable Status Line**

If this option is enabled (checked), applications can write messages on the status line.

## Help for Printer Definitions

The Printer definitions provide the default settings for terminal functions whose destination is a print device.

Print Extent determines what portion of the screen is printed when the Shift PrtSc keyboard function is executed or a print screen command is received.

Print Terminator specifies if a form feed character is generated after the screen is printed.

Printer Mode lets the terminal perform several print operations selected from the keyboard or from the host.

New Line On Close Capture is used to enable or disable the automatic newline sequence (carriage return + line feed) when sending data to a printer. Most users will prefer to leave this option disabled.

Append Disk Printer File On Close is provided primarily to handle hosts which initiate printing of small amounts of data on a frequent basis. Most users will prefer to leave this option enabled.

Send Initialize / Deactivate String Once is used only by append printer operations which have been redirected to a disk file, and prevents the printer initialization and deactivation strings from being sent to the file each time it is opened and closed.

## **Print Extent**

The Print Extent option determines what portion of the screen is printed when the Shift PrtSc keyboard function is executed or a print screen command is received. If this option is specified as Full Screen, the full screen will be printed. If this option is specified as Scrolling Region, only the area defined in the current scrolling region will be printed.

## **Print Terminator**

The Print Terminator option specifies if a form feed character is generated after the screen is printed using the keyboard function or when a print screen command is received. If this option is specified as Form Feed, a form feed character (0C hex) is appended to the data sent to the printer by the print screen function. If this option is specified as None, no form feed is included.

## **Printer Mode**

This option may be set to Normal, Auto or Controller.

If set to Normal, you can select all local printing functions from the keyboard.

Auto print mode prints the current display line when the cursor moves to the next line.

In Controller mode, the host computer has direct control of the printer. Characters received from the host go directly to the printer.

## New Line On Close Capture

**Function:** Enable or disable the automatic newline sequence (carriage return + line feed) when sending data to a printer. Most users will prefer to leave this box unchecked.

This option works with all data Capture to Printer operations. Softterm normally appends a newline sequence to the end of a data capture. However, when transmitting data, some hosts will initiate a capture, send a line of data, terminate capture, and repeat the process until all data has been transmitted. Appending the newline sequence each time would destroy the data's format. Leave this option unchecked to stop the automatic newline sequence from being appended and to maintain the data's format.



## Append Disk Printer File On Close

**Function:** This option is provided primarily to handle hosts which initiate printing of small amounts of data on a frequent basis. Most users will prefer to leave this option checked.

**Important:** The action of this function depends on the selected Print Path and whether or not a print device is busy.

**Case 1:** The Print Path uses a valid printer.

If the printer is available, all print activities (such as a capture to print or a host-initiated print function) will be sent to the printer.

If Append Disk Printer File on Close is disabled and the printer is not available (either off line, busy, etc.), all print activities (such as a capture to print or a host-initiated print function) will be sent to a temporary disk file. Each time the print activity is turned off, the temporary file will be closed.

If Append Disk Printer File on Close is enabled and the printer is not available (either off line, busy, etc.), all print activities (such as a capture to print or a host-initiated print job) will be sent to a temporary disk file. Each time the print activity is turned off, the temporary file will, in effect, remain open. When printing is turned on again, the data will be appended to the existing file.

The temporary file will be closed when one of the following happens:

1. You turn capture off from the File menu;
2. You clear the Append Disk Printer File on Close option;
3. You exit the Session Window; or
4. You exit Softerm.

**Case 2:** The Print Path uses a Disk printer with the "Automatically Create Unique Disk Print File" option checked. **Important:** If a Disk printer is given a user-specified file name, append is assumed and this setting does not affect the file.

If Append Disk Printer File on Close is disabled, every time the print activity is stopped, the disk file will be closed. Each new print activity will overwrite the disk file.

If Append Disk Printer File on Close is enabled, every time the print activity is stopped, the disk file will, in effect, remain open. Subsequent print activity initiation will append the new data to the original file.

The disk file will be closed when one of the following happens:

1. You turn capture off from the File menu;
2. You clear the Append Disk Printer File on Close option and close the capture;
3. You exit the Session Window; or
4. You exit Softerm.

## **Send Initialize / Deactivate String Once**

**Important:** This setting works only with append printer operations which are redirected to a disk file. This includes a Print Path which uses a Disk printer.

When this option is enabled, the printer initialization and deactivation strings will be sent to the printer file only once.

If this option is not enabled, the printer initialization and deactivation strings will be sent to the printer file each time it is opened and closed.

## Help for Video Definitions

These options let you set default values which affect the appearance and behavior of the display.

For more information, select:

[Cursor Type](#)

[Number of Columns](#)

[Screen Display](#)

[Cursor Displayed](#)

[New Line](#)

[Scroll](#)

[Auto Wrap](#)

[Page Mode](#)

[CR after LF](#)

[LF after CR](#)

[Enable Margin Bell](#)

[Enable Warning Bell](#)

[Clear Display](#)

## **Cursor Type**

The cursor displayed during online terminal emulation may be Underline, Partial Block, Half Block Top, Half Block Bottom, Centerline, or Full Block.

## Number of Columns

If **80** is selected, the emulation will be initialized in 80-column mode. If **132** is selected, the emulation will be initialized in 132-column mode.

## Screen Display

If **Normal** is selected, the foreground and background screen colors are displayed normally. If **Reverse** is selected, the foreground and background colors are reversed.

## **Auto Wrap**

**Note:** This parameter also is called Automatic New Line.

When enabled, this option specifies that the cursor should automatically move to the first character position in the next line when data is entered in the last position on the current line. If the current line is the last line on the screen and scrolling is enabled, the screen will scroll.

If this option is disabled, the cursor will stick at the last position of the current line. Additional data entered or received will overwrite the display position until a cursor movement command, such as a carriage return, is processed.

## **CR after LF**

If this option is enabled, Softerm automatically performs a carriage return function (cursor to first display position) in addition to a linefeed function (cursor down one line) whenever a linefeed character (0A hex) is received. If this option is disabled, no additional processing is performed for linefeed characters.



## Page Mode

This option sets the scrolling mode of the terminal. When Page Mode is enabled, scrolling is disabled and functions which normally cause scrolling will cause a wraparound to the top row.

When Page Mode is disabled, scrolling is enabled and the cursor will continue to scroll down one line at a time, each time the cursor is sent past the column limit on the last line of the displayed screen area.

**Note:** Page Mode is dependent on the Auto Wrap option being enabled.

## **LF after CR**

If this option is enabled, Softerm automatically performs a linefeed function (cursor down one line) in addition to a carriage return function (cursor to first display position) whenever a carriage return character (0D hex) is received. If this option is disabled, no additional processing is performed for carriage return characters.

## **Enable Margin Bell**

If checked, the audible alarm is sounded when a character is entered at column 74. If not checked, no alarm is issued.

## **Cursor Displayed**

If this option is enabled, the text cursor will be displayed.

## **New Line**

If this option is enabled, the PC's Enter key will send a carriage return-line feed sequence. If not checked, the Enter key sends only a carriage return.

## **Scroll**

If this option is checked, the speed at which new lines appear on the screen is limited, causing a smooth, steady scroll.

If not checked, scrolling is disabled.

## **Enable Warning Bell**

If this option is enabled, the bell will sound when a BEL (CtrlG) character is received from the host; after a compose character error; when errors occur while you are using local editing, and when Session Support Utility errors occur (the bell sounds twice).

## **Clear Display**

If this option is enabled, the terminal screen will be cleared each time it is accessed from the Terminal Emulation Settings dialogs.



## Help for Keypad Modes

The option Keypad Modes allows the default operating mode of the numeric keypad and cursor keys to be selected.

For additional information, select:

[Keypad Mode](#)

[Cursor Keys Mode](#)

## Keypad Mode

If set to Numeric and the Numeric Lock key is On, the keypad will generate numbers. If the Numeric Lock key is Off, the keypad will generate Local Edit Functions.

If set to Application and the Numeric Lock key is On, the special keypad applications mode is enabled and generates special code sequences. If the Numeric Lock key is Off, the keypad will generate Local Edit Functions unless used with the Alt key, in which case an Application Mode sequence will be generated.

**Note:** The host may override the setting of this option.

## **Cursor Keys Mode**

This option may be set to ANSI or Application and determines what codes are transmitted by the cursor keys.

If set to ANSI, standard ANSI cursor control sequences are transmitted.

If set to Application, special alternate sequences are transmitted.

## **Help for Break Enabled Mode**

This option determines if the BREAK function is enabled. If this option is set to No, the BREAK function is disabled.

## **Break Enabled**

If this option is set to No, the BREAK function is disabled.

## **Help for Tab Stop Settings**

Default tab stops are set every 8 columns beginning with column 9. To change tab stop settings, use the cursor keys to select the appropriate tab position and press Space to toggle the setting, or click on the appropriate tab position to toggle the setting.

## Help for Answerback Message

If an Answerback string is defined, it can be transmitted automatically when requested, and it can be transmitted manually by a keyboard function.

For additional information, select:

[Auto-answerback On Connect](#)  
[Answerback Message](#)

## **Auto-answerback On Connect**

If enabled, the answerback string will be transmitted automatically whenever a new connection is made.

If not checked, it is not transmitted.



## **Answerback Message**

Displayable and non-displayable ASCII character codes may be included in an answerback string.

To enter non-displayable ASCII character codes, such as [CR] for Carriage Return, use the acronym listed in the ASCII column in [ASCII Character Codes](#)

The answerback string can contain up to 30 actual characters.

## Help for User Preference Settings

User Preference Settings let you set whether or not the host system can change User Key and User Features settings.

For additional information, select:

[User Keys](#)

[User Features](#)

[User Preference Character Set](#)

## User Keys

If this option is set to **Unlocked**, the user key definitions can be altered from the host.

If this option is set to **Locked**, user key definitions cannot be altered.

## User Features

These include light/dark screen, tab stops, and keyboard lock.

If this option is set to **Unlocked**, the host can change the user preference features.

If this option is set to **Locked**, the host cannot alter user preference features.

## **User Preference Character Set**

This option selects the DEC Multinational or the ISO Latin-1 character set. The difference between the sets is their supplemental character set.

DEC-MCS selects the DEC Multinational set which is compatible with Digital applications.

ISO Latin-1 selects the International Standards Organization set. If your applications can use the ISO character set, you should select this option.

## **Help for Keyboard Dialect**

The emulation option Keyboard Dialect is used to respond to a request from the host. In general, you should set this option to match the layout of your keyboard. The options available are: North American, British, Flemish, Canadian (French), Danish, Finnish, German, Dutch, Italian, Swiss (French), Swiss (German), Swedish, Norwegian, French/Belgian, Spanish and Portuguese.

## **Keyboard Dialect**

From the drop-down list box, select one of the available dialects and choose OK.

**Note:** Appropriate dialects are keyboard dependent.

## Help for Graphics Set-Up

These options let you define graphics characteristics.

For additional information, select:

[Graphics Cursor](#)

[Macrograph Report](#)

[Best Fit Line Pattern](#)



## **Graphics Cursor**

If Graphics Cursor is enabled, the diamond cursor will be displayed. If it is not enabled, the diamond cursor will not be displayed.

## **Macrograph Report**

If Macrograph Report is enabled, the ReGIS interpreter will be able to report the contents of a specified macrograph location. If this option is not enabled, the report command option will be disabled.

## **Best Fit Line Pattern**

This option is specific to the Softerm VT340 emulation and allows you to speed up your display.

If precise line placement is not a factor, enable Best Fit Line Pattern to use the operating system's line patterns and speed up the display.

If precise line placement is necessary, leave this option disabled.

## Help for Graphics Color Set-Up

The VT340 contains 16 output map RAM locations. Each location stores both a monochrome intensity value (for monochrome monitors) and a color value (for color monitors). Note that this emulation does not support the monochrome mapping.

These options let you change the values for these locations.

The 16 output map locations are selected from the Color Index list and the associated colors are selected from the Color list. Note that the colors follow the HLS (hue/lightness/saturation) model.

For additional information, select:

Color Index

Color

## **Color Index**

The 16 output map locations are identified as Color 0 through Color 15. When you select the map location to which you want to assign a different color, the Color list changes to reflect the currently-assigned value.

## **Color**

Assign any of the 64 available colors to the selected output map location.

## Help for 4010 / 4014 Set-Up

These options let you define Tektronix 4010/4014 graphics characteristics.

For additional information, select:

Character Mode

CR Effect

LF Effect

Del Implies Lo Y

GIN Terminator

## **Character Mode**

If Character Mode is set to Aligned Characters, four small character sizes are used. If set to Enlarged Characters, two larger character sizes are used.



## **CR Effect**

CR Effect may be set to CR, or CR-LF, and selects whether or not a received carriage return also causes a line feed.

## **LF Effect**

LF Effect may be set to LF or LF-CR, and selects whether or not a received line feed also causes a carriage return.

## **Del Implies Lo Y**

If Del Implies Lo Y is enabled, the ASCII code associated with the DEL control character can be a possible low Y value in 401X-series coordinate specifications. If set to Ignore, DEL as low Y for graphics mode is disabled.

## **GIN Terminator**

GIN Terminator may be set to None, CR, or CR-EOT, and selects whether or not to send a terminator after the Graphic Input mode address. If set to None, no terminator is sent. If set to CR, a carriage return is sent; and if set to CR- EOT, a carriage return and an End-Of-Transmission character are sent.

## Help for Display Set-Up

These options affect the way data appears on the screen.

For additional information, select:

[Page Arrangement](#)

[Enable Horizontal Coupling](#)

[Enable Vertical Coupling](#)

[Enable Page Coupling](#)

## **Page Arrangement**

This option selects the size of pages, based on the number of lines per page.

### **6x24**

Selects 6 pages, with 24 lines per page.

### **2x72**

Selects 2 pages, with 72 lines per page.

### **4x36**

Selects 4 pages, with 36 lines per page.

### **1x144**

Selects 1 page of 144 lines.

## **Enable Horizontal Coupling**

This option selects whether or not to pan automatically when the cursor moves beyond the left or right border of a window.

If Horizontal Coupling is enabled (checked), the emulation will pan automatically to keep the cursor visible. If this option is disabled, the emulation will not pan automatically.

## **Enable Vertical Coupling**

This option selects whether or not to pan automatically when the cursor moves beyond the top or bottom border of a window.

If Vertical Coupling is enabled (checked), the emulation will pan automatically to keep the cursor visible. If this option is disabled, the emulation will not pan automatically.



## **Enable Page Coupling**

This option selects whether or not to display a new page automatically when the cursor moves to a new page in memory.

If Page Coupling is enabled (checked) and the cursor moves to a new page, the emulation will display the new page. If this option is disabled and the cursor moves to a new page, you will not be able to see the page or the cursor.

## Help for Local Editing Set-Up

The VT340 can work as an interactive or editing Terminal. As an interactive terminal, the VT340 sends each typed character directly to the host, which performs your edits.

In Local Editing mode, you edit your text on the terminal and then send a block of edited text to the host.

**Note:** Make sure your application software supports local editing.

This dialog lets you select edit mode and set the features for local edit. Usually, the application software selects these settings, but it may prompt you to change some settings.

For additional information, select:

Edit Mode

Erase Mode

Edit Key Execution Mode

Transmit Execution Mode

End of Line Characters

End of Block Characters

Guarded Area Transfer Mode

Selected Area Transfer Mode

Multiple Area Transfer Mode

VT131 Transfer Mode

Line Transmit Mode

Transfer Termination Mode

Space Compression Mode

## **Edit Mode**

This option determines whether or not you can select local editing.

If set to Unavailable, neither you nor the host can select edit mode.

If set to Interactive, each character you type is sent immediately to the host. The host can turn edit mode off.

If set to Edit, edited text is stored until it is sent as a block to the host. The host can turn edit mode off.

## **Erasure Mode**

This option determines which characters you or the host can erase in edit mode.

If set to Unprotected, you or the host can edit only unprotected characters.

If set to All, you or the host can edit protected and unprotected characters.

## **Edit Key Execution Mode**

This option determines how the VT340 emulation switches between interactive and editing modes.

If set to Immediate, when you press the Shift-EDIT keyboard equivalent, the VT340 immediately switches modes.

If set to Deferred, when you press the Shift-EDIT keyboard equivalent, the emulation sends a request to the host to switch modes.

## **Transmit Execution Mode**

This option determines how the VT340 emulation sends a block of data to the host in edit mode.

If set to Immediate, when you press the Transmit keyboard equivalent, the data is sent to the host immediately.

If set to Deferred, when you press the Transmit keyboard equivalent, the emulation notifies the host that data is available. The emulation locks the keyboard until the emulation receives a transmit instruction from the host.

## End of Line Characters

This option lets you select the characters used to indicate the end of a line in a data block. By default, the emulation sends a carriage return [CR]. You can enter up to six values.

To enter non-displayable ASCII character codes, such as [CR] for Carriage Return, use the acronym listed in the ASCII column in [ASCII Character Codes](#)

## End of Block Characters

This option lets you select the characters used to indicate the end of a data block. This feature has no default. You can enter up to six values.

To enter non-displayable ASCII character codes, such as [CR] for Carriage Return, use the acronym listed in the ASCII column in [ASCII Character Codes](#)



## **Guarded Area Transfer Mode**

This option determines whether or not you can send protected characters to the host.

If set to All, when you press the Transmit keyboard equivalent, the emulation sends protected and unprotected characters.

If set to Unprotected, when you press the Transmit keyboard equivalent, the emulation sends only unprotected characters.

## **Selected Area Transfer Mode**

This option determines whether the emulation can send all characters or only selected characters to the host.

If set to All, when you press the Transmit keyboard equivalent, the emulation sends all characters on the current page.

If set to Selected, when you press the Transmit keyboard equivalent, the emulation sends only selected areas.

## Multiple Area Transfer Mode

This option determines whether the emulation can send all selected areas on the page, or only the selected area with the cursor. **Note:** This mode only works when Selected Area Transfer Mode is set to Selected.

If set to Multiple, when you press the Transmit keyboard equivalent, the emulation sends all selected areas on the current page.

If set to Single, when you press the Transmit keyboard equivalent, the emulation sends only the selected area containing the cursor.

## **VT131 Transfer Mode**

When Line Transmit Mode is disabled, this feature selects an ANSI-style or VT131-style data transmission. The size of the block depends on Transmit Termination Mode.

If set to ANSI, the emulation works according to American National Standards Institute rules.

If set to VT131, the emulation works like a VT131 terminal. Use this setting to run software designed for the VT131.

## **Line Transmit Mode**

This option lets you send characters a line at a time to the host.

If Disabled (not checked), when you press the Transmit keyboard equivalent, the emulation sends a full or partial page. The size of the page depends on the Transmit Termination Mode and the VT131 Transmit Mode.

If Enabled, the emulation sends only a line of eligible characters when the Transmit keyboard equivalent is pressed.

## **Transfer Termination Mode**

When the Line Transmit Mode is disabled, this option determines whether the emulation sends a partial page or the scrolling region.

If this option is Enabled (checked), when you press the Transmit keyboard equivalent, the emulation sends the scrolling region, which is the area inside the scrolling margins.

If this option is Disabled, when you press the Transmit keyboard equivalent, the emulation sends a block based on the setting of the VT131 Transmit Mode.

## **Space Compression Mode**

This option determines how the emulation sends unused character fields and spaces in a data block.

If this option is Disabled (not checked), the emulation sends a space character for each unused character position.

If this option is Enabled, the emulation sends a record separator in place of unused characters. The last field on a line contains an End of Line character.





## 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