TinyVGA.com: VGA Microcontroller interface

ANSI Terminal Emulation ESCape sequencies

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Parameters used in ANSI escape sequencies

Pn
    Numeric parameter. Specifies a decimal number.

Ps
    Selective parameter. Specifies a decimal number that you use to select
    a function. You can specify more than one function by separating the
    parameters with semicolons.

PL
    Line parameter. Specifies a decimal number that represents one of the
    lines on your display or on another device.

Pc
    Column parameter. Specifies a decimal number that represents one of the
    columns on your screen or on another device.

ANSI escape sequences for cursor movement, graphics, and keyboard settings

In the following list of ANSI escape sequences, the abbreviation ESC
represents the ASCII escape character 27 (1Bh), which appears at the
beginning of each escape sequence.

ESC[PL;PcH
    Cursor Position: Moves the cursor to the specified position
    (coordinates). If you do not specify a position, the cursor moves to the
    home position��the upper-left corner of the screen (line 0, column
    0). This escape sequence works the same way as the following Cursor
    Position escape sequence.

ESC[PL;Pcf
    Cursor Position: Works the same way as the preceding Cursor Position
    escape sequence.

ESC[PnA
    Cursor Up: Moves the cursor up by the specified number of lines without
    changing columns. If the cursor is already on the top line, ANSI.SYS
    ignores this sequence.

ESC[PnB
    Cursor Down: Moves the cursor down by the specified number of lines
    without changing columns. If the cursor is already on the bottom line,
    ANSI.SYS ignores this sequence.

ESC[PnC
    Cursor Forward: Moves the cursor forward by the specified number of
    columns without changing lines. If the cursor is already in the
    rightmost column, ANSI.SYS ignores this sequence.

ESC[PnD
    Cursor Backward: Moves the cursor back by the specified number of
    columns without changing lines. If the cursor is already in the leftmost
    column, ANSI.SYS ignores this sequence.

ESC[s
    Save Cursor Position: Saves the current cursor position. You can move
    the cursor to the saved cursor position by using the Restore Cursor
    Position sequence.

ESC[u
    Restore Cursor Position: Returns the cursor to the position stored
    by the Save Cursor Position sequence.

ESC[2J
    Erase Display: Clears the screen and moves the cursor to the home
    position (line 0, column 0).

ESC[K
    Erase Line: Clears all characters from the cursor position to the
    end of the line (including the character at the cursor position).

ESC[Ps;...;Psm
    Set Graphics Mode: Calls the graphics functions specified by the
    following values. These specified functions remain active until the next
    occurrence of this escape sequence. Graphics mode changes the colors and
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attributes of text (such as bold and underline) displayed on the screen.

Text attributes
- 0 All attributes off
- 1 Bold on
- 4 Underscore (on monochrome display adapter only)
- 5 Blink on
- 7 Reverse video on
- 8 Concealed on

Foreground colors
- 30 Black
- 31 Red
- 32 Green
- 33 Yellow
- 34 Blue
- 35 Magenta
- 36 Cyan
- 37 White

Background colors
- 40 Black
- 41 Red
- 42 Green
- 43 Yellow
- 44 Blue
- 45 Magenta
- 46 Cyan
- 47 White

Parameters 30 through 47 meet the ISO 6429 standard.

ESC[=psh
Set Mode: Changes the screen width or type to the mode specified by one of the following values:

0	40 x 148 x 25 monochrome (text)
1	40 x 148 x 25 color (text)
2	80 x 148 x 25 monochrome (text)
3	80 x 148 x 25 color (text)
4	320 x 148 x 200 4-color (graphics)
5	320 x 148 x 200 monochrome (graphics)
6	640 x 148 x 200 monochrome (graphics)
7	Enables line wrapping
13	320 x 148 x 200 color (graphics)
14	640 x 148 x 200 color (16-color graphics)
15	640 x 148 x 350 monochrome (2-color graphics)
16	640 x 148 x 350 color (16-color graphics)
17	640 x 148 x 480 monochrome (2-color graphics)
18	640 x 148 x 480 color (16-color graphics)
19	320 x 148 x 200 color (256-color graphics)

ESC[=Psl
Reset Mode: Resets the mode by using the same values that Set Mode uses, except for 7, which disables line wrapping. The last character in this escape sequence is a lowercase L.

ESC[code;string;...p
Set Keyboard Strings: Redefines a keyboard key to a specified string. The parameters for this escape sequence are defined as follows:

Code is one or more of the values listed in the following table. These values represent keyboard keys and key combinations. When using these values in a command, you must type the semicolons shown in this table in addition to the semicolons required by the escape sequence. The codes in parentheses are not available on some keyboards. ANSI.SYS will not interpret the codes in parentheses for those keyboards unless you specify the /X switch in the DEVICE command for ANSI.SYS.

String is either the ASCII code for a single character or a string contained in quotation marks. For example, both 65 and "A" can be used to represent an uppercase A.

IMPORTANT: Some of the values in the following table are not valid for all computers. Check your computer's documentation for values that are different.

Key	Code	SHIFT+code	CTRL+code	ALT+code
F1	0;59	0;84	0;94	0;104
F2	0;60	0;85	0;95	0;105
F3	0;61	0;86	0;96	0;106

F4	0;62	0;87	0;97	0;107
F5	0;63	0;88	0;98	0;108
F6	0;64	0;89	0;99	0;109
F7	0;65	0;90	0;100	0;110
F8	0;66	0;91	0;101	0;111
F9	0;67	0;92	0;102	0;112
F10	0;68	0;93	0;103	0;113
F11	0;133	0;135	0;137	0;139
F12	0;134	0;136	0;138	0;140
HOME (num keypad)	0;71	55	0;119	??
UP ARROW (num keypad)	0;72	56	(0;141)	??
PAGE UP (num keypad)	0;73	57	0;132	??
LEFT ARROW (num keypad)	0;75	52	0;115	??
RIGHT ARROW (num keypad)	0;77	54	0;116	??
END (num keypad)	0;79	49	0;117	??
DOWN ARROW (num keypad)	0;80	50	(0;145)	??
PAGE DOWN (num keypad)	0;81	51	0;118	??
INSERT (num keypad)	0;82	48	(0;146)	??
DELETE (num keypad)	0;83	46	(0;147)	??
HOME	(224;71)	(224;71)	(224;119)	(224;151)
UP ARROW	(224;72)	(224;72)	(224;141)	(224;152)
PAGE UP	(224;73)	(224;73)	(224;132)	(224;153)
LEFT ARROW	(224;75)	(224;75)	(224;115)	(224;155)
RIGHT ARROW	(224;77)	(224;77)	(224;116)	(224;157)
END	(224;79)	(224;79)	(224;117)	(224;159)
DOWN ARROW	(224;80)	(224;80)	(224;145)	(224;154)
PAGE DOWN	(224;81)	(224;81)	(224;118)	(224;161)
INSERT	(224;82)	(224;82)	(224;146)	(224;162)
DELETE	(224;83)	(224;83)	(224;147)	(224;163)
PRINT SCREEN	??	??	0;114	??
PAUSE/BREAK	??	??	0;0	??
BACKSPACE	8	8	127	(0)
ENTER	13	??	10	(0
TAB	9	0;15	(0;148)	(0;165)
NULL	0;3	??	??	??
A	97	65	1	0;30
B	98	66	2	0;48
C	99	66	3	0;46
D	100	68	4	0;32
E	101	69	5	0;18
F	102	70	6	0;33
G	103	71	7	0;34
H	104	72	8	0;35

I	105	73	9	0;23
J	106	74	10	0;36
K	107	75	11	0;37
L	108	76	12	0;38
M	109	77	13	0;50
N	110	78	14	0;49
O	111	79	15	0;24
P	112	80	16	0;25
Q	113	81	17	0;16
R	114	82	18	0;19
S	115	83	19	0;31
T	116	84	20	0;20
U	117	85	21	0;22
V	118	86	22	0;47
W	119	87	23	0;17
X	120	88	24	0;45
Y	121	89	25	0;21
Z	122	90	26	0;44
1	49	33	??	0;120
2	50	64	0	0;121
3	51	35	??	0;122
4	52	36	??	0;123
5	53	37	??	0;124
6	54	94	30	0;125
7	55	38	??	0;126
8	56	42	??	0;126
9	57	40	??	0;127
0	48	41	??	0;129
-	45	95	31	0;130
=	61	43	??-	0;131
[	91	123	27	0;26
]	93	125	29	0;27
	92	124	28	0;43
;	59	58	??	0;39
'	39	34	??	0;40
,	44	60	??	0;51
.	46	62	??	0;52
/	47	63	??	0;53
`	96	126	??	(0;41)
ENTER (keypad)	13	??	10	(0;166)
/ (keypad)	47	47	(0;142)	(0;74)
* (keypad)	42	(0;144)	(0;78)	??
- (keypad)	45	45	(0;149)	(0;164)

+ (keypad)	43	43	(0;150)	(0;55)
5 (keypad)	(0;76)	53	(0;143)	⍰⍰