

Appendix VII

Text VDU Control Codes.

Character values in the range 0-31 sent to the main Text VDU output routine (TXT OUTPUT) do not produce a character on the screen, but are interpreted as control codes. These codes may affect the meaning of one or more of the following characters, which are the code's parameters.

All control codes work on the currently selected stream unless otherwise indicated. For instance, setting the pen, code 15, sets the text pen ink for the currently selected stream whilst setting the colour of an ink, code 28, will affect all streams (and the Graphics VDU).

Certain codes force the current position (the cursor position) to a legal position inside the current window before they are obeyed. This is explained in more detail in section 4.5. The cursor may be left in an illegal position.

The following table specifies the default actions for the control codes. By changing entries in the control code table the action of these codes can be altered as desired. See section 4.7 for a full description.

Code	Name	Params	Action
0	NUL	0	In V1.1 firmware: Force the cursor to a legal position(see TXTVALIDATE). In V1.0 firmware: No effect.
1	SOH	1	Print the character given by the parameter (see TXT WR CHAR). This allows characters 0..31 to be printed.
2	STX	0	Disable the cursor blob (see TXT CUR DISABLE). Reverses the effect of ETX (code 3).
3	ETX	0	Enable the cursor blob (see TXT CUR ENABLE). Reverses the effect of STX (code 2).
4	EOT	1	Set the screen mode given by the parameter (see SCR SET MODE). The parameter is taken MOD 4 and the value 3 is ignored: 0 sets mode 0 (160 x 200). 1 sets mode 1 (320 x 200). 2 sets mode 2 (640 x 200).
5	ENQ	1	Print the character given by the parameter using the Graphics VDU as if the graphic character write mode was active (see TXT SET GRAPHIC and GRA WR CHAR).

6	ACK	0	Enable the VDU (see TXT VDU ENABLE). Reverses the effect of NAK (code 2 1).
7	BEL	0	Makes a short bleep, sound. Note that this flushes the sound queues.
8	BS	0	Make the current position legal then move left one character.
9	TAB	0	Make the current position legal then move right one character.
10	LF	0	Make the current position legal then move down one line.
11	VT	0	Make the current position legal then move up one line.
12	FF	0	Clear the current window and move the current position to the top left corner (see TXT CLEAR WINDOW).
13	CR	0	Make the current position legal and then move it to the left edge of the window on the current line (see TXT SET COLUMN).
14	SO	1	Set the paper ink to the ink given by the parameter (see TXT SET PAPER). Parameter is taken MOD 16.
15	SI	1	Set the pen ink to the ink given by the parameter (see TXT SET PEN). Parameter is taken MOD 16.
16	DLE	0	Make the current position legal then clear it to the current paper ink.
17	DC1	0	Make the current position legal then clear from the left edge of the window to the current position inclusive. The affected cells are set to the current paper ink.
18	DC2	0	Make the current position legal then clear from it to the right edge of the window inclusive. The affected cells are set to the current paper ink.
19	DC3	0	Make the current position legal then clear from the start of the window to the current position inclusive. The affected cells are set to the current paper ink.
20	DC4	0	Make the current position legal then clear from it to the end of the window inclusive. The affected cells are set to the current paper ink.
21	NAK	0	Disable the VDU (see TXT VDU DISABLE). Reverses the effect of ACK (code 6).

22	SYN	1	Set the character write mode from the parameter (see TXT SET BACK). The parameter is taken MOD 2 and: 0 sets opaque mode (the default mode). 1 sets transparent mode.
23	ETB	1	Set the Graphics VDU write mode from the parameter (see SCR ACCESS). The parameter is taken MOD 4 and: 0 sets FORCE mode (the default mode). 1 sets XOR mode. 2 sets AND mode. 3 sets OR mode.
24	CAN	0	Exchange the current pen and paper inks (see TXT INVERSE).
25	EM	9	Set the matrix for a character (see TXT SET MATRIX). The first parameter specifies which character is to be set. The next 8 parameters are the matrix for the character (given top to bottom). If the character is not user definable then no action is taken.
26	SUB	4	Set the limits of the text window (see TXT WIN ENABLE). The first two parameters specify the left and right columns of the window (the smaller is the left column); the last two parameters specify the top and bottom rows of the window (the smaller is the top row).
27	ESC	0	No effect - available for user.
28	FS	3	Set the colours in which to display an ink (see SCR SET INK). The first parameter is taken MOD 16 and specifies which ink is to be set, The second and third parameters are taken MOD 32 and specify the two colours for the ink.
29	GS	2	Set the colours with which to display the border (see SCR SET BORDER). The two parameters are taken MOD 32 and specify the two colours for the border.
30	RS	0	Move the current position to the top left corner of the window (see TXT SET CURSOR).
31	US	2	Move the current position to a given position in the current window (see TXT SET CURSOR). The first parameter specifies the column to move to, the second parameter specifies the row to move to (row 1, column 1 is the top left corner of the window).

