Support Group Application Note
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Author:

Acorn Electron Screen Displays

Applicable Hardware : Acorn Electron

Related Application Notes:

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Acorn Electron Microcomputers are set to display within the full picture area defined by the PAL TV standard. This makes maximum use of the display area and resolution available on a TV set, and is particularly important when using a monitor.

However, some TV manufacturers have changed their policy with regard to setting up TV pictures, and now adjust sets so that the top of the picture is "off screen". This may mean that, when connected to your computer, you may not see the top line of characters on the screen. If you have this problem, you will usually find that TV retailers or rental companies will adjust you set for you, either free of charge or for a small fee.

Most software authors are aware of this problem, and should write their programs so that you do not lose important information. If you find a commercially available program (eg a game) which exhibits this problem, we suggest that you contact the software authors.

For your own use, a simple way around the problem which does not require adjusting your TV set is to use the text window facility, which is described on page 92 of the Electron User Guide. This restricts text output to a specific area of the screen, which can be set to exclude the top and/or bottom lines. Note that this method will not work for games or other commercial software: you will need to contact the authors and make them aware of the problem.

The command used depends on which screen mode is in use. After switching on, the Electron is in mode 6. Entering the following command will ensure that no further text is printed on the top line:

```
VDU 28,0,24,39,1
```

A VDU 28 command should be entered every time the Electron is switched on, or whenever the mode is changed (by a MODE command). The commands for each screen mode are listed below:

MODE	COMMAND
0	VDU 28,0,31,79,1
1	VDU 28,0,31,39,1
2	VDU 28,0,31,19,1
3	VDU 28,0,24,79,1
4	VDU 28,0,31,39,1
5	VDU 28,0,31,19,1
6	VDU 28,0,24,39,1

These commands may be placed in a program (eg straight after a MODE statement), or may be entered directly at the keyboard.

If you are likely to change mode a lot, it may be useful to set up the function keys so that you can accomplish changing the mode and setting the window with a single key press. If you enter and then SAVE the following program, you can automatically set up the function keys just by CHAINing the program when you switch on the Electron. Once this program has been run, pressing (for example) FUNC-2 will select mode 2 and will automatically set up the text window. (FUNC-2 is obtained by holding down the FUNC key and then pressing and releasing "2").

Note that the "|" character is obtained by holding down SHIFT and pressing the "right arrow" key.

```
10  *KEY 0 MODE 0 |M VDU 28,0,31,79,1 |M
20  *KEY 1 MODE 1 |M VDU 28,0,31,39,1 |M
30  *KEY 2 MODE 2 |M VDU 28,0,31,19,1, |M
40  *KEY 3 MODE 3 |M VDU 28,0,24,79,1 |M
50  *KEY 4 MODE 4 |M VDU 28,0,31,39,1 |M
60  *KEY 5 MODE 5 |M VDU 28,0,31,19,1 |M
70  *KEY 6 MODE 6 |M VDU 28,0,24,39,1 |M
```

If you wish to use the text window in other ways, the general form of the VDU command is as follows:

VDU 28,a,b,c,d

where: a is the left hand column number (starting at 0)
b is the bottom row number (starting with row 0 at the top)
c is the right hand column number
d is the top row number
of the area on the screen where text is to be displayed.

After a VDU 28 command, text will only be printed inside the area specified. See page 92 and page 112 of the Electron User Guide for further details. By using a different number for "b", it is possible to remove the bottom line of the display as well.

The *KEY command and function keys are described in chapter 24 of the Electron User Guide.

Electron Television Display

When using a television set with an Acorn Electron computer you may find that the top lines of the screen image are not displayed. The commands shown below can be used as a "one off" or incorporated into a procedure and called up when a complete picture is displayed on the screen. This problem can then be easily overcome.

Using VDU 11 (CTRL K) will move the screen down one line if the text cursor is positioned somewhere on the top line of the screen. If the cursor is not already positioned there, this can be achieved by using the command VDU 30 (CTRL . immediately prior to the VDU 11 command. this has the effect of homing the text cursor to the top left hand corner of the screen, therefore ensuring that the VDU 11 command has the desired effect.

Having carried out this operation the text cursor is now left at the top of the screen and all text will be printed at that position. This problem can be overcome by using the following statement instead:

```
A=POS : B=VPOS-1 : VDU 30,11 : P.TAB (A,B)
```

The variables POS and VPOS contain the X,Y co-ordinates of the text cursor's present screen position. Having "remembered" your current screen position you can then use the VDU 30,11 command to move the screen display down one line. Having moved the image down the screen it is then possible, with the P.TAB (A,B) command, to return to your original position. You do in fact return to the same point on the X axis but one line up on the Y axis "B=VPOS-1". this enables you to return "physically" to the same point you left, rather than the point in the text. This is only really necessary if your original position was on the bottom line of the screen, as returning to that position in the text would require moving to a position off the bottom of the screen.