

Technical Bulletin

Printing Lower Case and Control Characters on the VZ-200/300

As you may be aware the VZ-200/300 computers do not display the standard lower case ASCII characters. Instead they display inverse and graphics characters. To obtain a printout of these special characters the BASIC switches the printer to the graphics mode, outputs a graphic image of the non-standard character. Then switches the printer back to the text mode (NOTE. the X-3250 GP-100 printer is the only printer that the special characters can be printed on).

Because the BASIC used in the VZ-200/300 filters certain ASCII characters when the LPRINT or LLIST statements are used when you wish to print one of these characters in their standard form an OUT statement must be used. Here is a program listing to show the use of the OUT statement.

```
10 FOR X= 1 33 TO 127
20 OUT 1,X
30 OUT 2,X
40 FOR T= 1 TO 100:NEXT T
50 NEXT X
60 OUT 1,0
70 OUT 2,0
```

There are three points to notice in the above program

1. You must OUT to both ports 1 and 2 in that order.
2. Because the OUT statement does not check the status of the port you must include a delay loop (see line 40) to allow the printer time to actually print each character.
3. Because the OUT statement can disturb the BASIC stack pointers you must reset the parallel port before using the LPRINT or LLIST statements. This is done with the lines 60 & 70.

It is important to know that the VZ-200/300 computers use the ASCII character 00 (NUL) to reset the parallel port. This means that printers that use the ASCII 00 as a control character will have some problems in operation on the VZ-200/300 computers. In most cases (but not in all) printers that use the ASCII 00 have an alternate character that can be used (usually ASCII 128).

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