



**Program by M Probert**

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### **Introduction**

Whilst the Sinclair Spectrum has the capacity for twenty one special characters to be designed and stored by the user, many users have found that twenty one is simply not enough for their purposes. Also the act of designing a character in paper and then transferring it into a DATA statement en route to being Poked into the required user-defined-graphic, is both time consuming and error prone.

The obvious solution to the problem is to purchase a "Character Generator", which is just what you have done!

But this is no ordinary character generator. As well as giving any user the capacity to design user-defined-graphics quickly and free from error, with the ability to correct mistakes should any arise at a later date, this character generator also gives the option of creating an entire new character set.

This new character set may be graphic symbols or lettering sets, and may be used solely in place of the existing Sinclair character set, or with it, Characters from both sets being displayed on the same line even! Any set of characters thus created, may be saved onto

cassette tape, and used freely in any of your own programs you may write, even whilst writing a program, so as to give a spectacular listing!

With regard to memory consumption, often an important consideration when deciding upon "extras" for a program, especially adventure games, a complete "alternative" character set and twenty one user-defined-graphics use up only 936 Bytes! Some of which would have been designated to the user-defined-graphics in any case.

The start address of the alternative character set is 64600, which is right at the top of RAM. Making any character set compatible with the majority of machine-code software as well as programs written in "BASIC" and of course our very own SCOPE computer graphics language!

To show you the kinds of results which are possible when using an "alternative" character set, we have included a few with this program. Notice that with regard to lettering and extra graphics, the only limit is your imagination.

Enough of the chit-chat, let's get on with how to use this program!

## The CHARACTER GENERATOR

### 1] Designing an Individual Character

Upon selection from the menu of option 1, the screen clears, and a further list of instructions are displayed which explain how to operate the "design" section of the program.

When you are happy with these instructions, press ENTER and an 8\*8 grid will be displayed in place of the instructions. IN the top left corner of the grid will be a flashing +. This is your cursor which you should move around the grid to the required cells to be filled or emptied.

You will have noticed from the instructions that upon pressing key 9, the cell which is at present occupied by the cursor becomes filled in, and that upon pressing the key 0, the cell becomes emptied.

If you press any of the keys 5 to 8 inclusive you will notice that the cursor moves in the direction as indicated by the arrow above the key. Thus key 5 will move the cursor one cell to the left, and key 8 will move the cursor one cell to the right. Notice that the cursor will not travel off the grid.

If whilst pressing one of the keys 5 to 8, you also hold down the "CAPS SHIFT" key, the cursor will move in the same direction as before, but leaving behind it a trail of filled cells. Similarly if the "SYMBOL SHIFT" key is held down whilst pressing one of the keys 5 to 8. the cursor will move, but leaving a trail of empty cells behind it. This "auto-repeating" is very useful for filling in or deleting large portions of a character, obviously though for more intricate work, the single fill/empty keys 9 and 0 are more useful.

When you are satisfied with the design for your character, press the "ENTER" key, and a prompt will appear at the bottom of the screen requesting you to enter a character.

The character which you enter at this point must be one of the single characters such as "%" or "A" but not for example "<>" or "STOP".

This character will then in the alternative character set be set to the specifications as laid out by your design on the grid, with the result that when your alternative character set is implemented, this is the character which will appear rather than the usual Sinclair character.

Do not worry about having to redesign the entire character set if you do not wish to, as immediately upon loading, the program automatically copies the Sinclair character set into your alternative set. Thus you may redesign only one character, but when implemented your

alternative character set will retain the original Sinclair characters, but with one replaced. After entering the character for replacement, there will be a short delay of a few seconds, during which time the character is placed into your alternative character set, after this delay the screen will clear, and display the normal sized version of the character you have just designed.

Pressing "ENTER" at this point will return you to the menu of options which you were confronted with originally.

## **2] Displaying an Individual Character**

Often, when creating a modified lettering set, it may be useful to be able to compare the Sinclair version of the letter, with the new one you have designed and which now resides in your alternative character set in RAM. It is for this purpose that the "display individual character" function has been included.

Upon selecting this function (option 2 from the menu), a prompt will appear with a request for a character to be entered. After which both the Sinclair and your new version of the same character will be displayed, and a further prompt given for you to either enter another character to be displayed in both of its forms, or press "ENTER" in which case you will return to the menu of options ready to choose a new function.

This function is fine if you merely wish to compare the forms of a few characters, but if you should desire to compare both the complete character sets, or merely view the complete alternative character set, then there is another function which will display the required data for you.

## **3] Display Whole Character Set**

Upon selection of option 3, the screen will clear, and both the Sinclair, and your alternative character set will be displayed. Pressing "ENTER" at this point will return you to the menu of options.

## **4] Reset Character Set**

When option 4 is selected, the Sinclair character set is once again copied into RAM, at the space reserved for the alternative character set. Thus effectively resetting your alternative character set, but leaving the user-defined-graphics untouched.

## **5] Save Character Set and UDGs**

In order to store your character set and user-defined-graphics upon cassette tape for use at a later date, it is necessary to select option 5.

You will then be required to enter a title of not more than ten characters under which your character set will be saved using the Sinclair Spectrum's save bytes facility.

## **6] Define a UDG**

This facility allows you to design a user-defined-graphic in the same way as you would design a character (see section 1). However, now when you enter the required character for the design to be stored in, the prompt is referring to a letter between A and T, but relevant to the user-defined-graphic characters rather than the alternative character set.

Notice that user-defined-graphic U is not available for use as it is used by the operating system to construct the design grid.

## **7] Display all UDGs**

In much the same way as the alternative character set may be displayed in its entirety, so too may all the user-defined-graphics be displayed.

The format of this display is in two columns, one containing a letter between A and U, the other (right) column displaying the relevant user-defined-graphic for that key.

Again, in order to return to the menu of options after using this function, press "ENTER".

## **8] Alter Character/UDG**

This is in its own right perhaps the most powerful feature of the I.S.P. Character Generator.

Upon selecting option 8, you will be presented with a prompt to enter a character, notice that when you enter the character, that it is taken from your alternative character set, unless you press "CAPS SHIFT" and "9" at the same time and then enter your character in which case it will be taken from the set of user-defined-graphics.

After entering the desired character, this character is then reproduced in an enlarged format upon the design grid ready for you to modify it should you wish to. From here the procedure is the same as for options 1 and 6.

## **Using Character Sets and other tricks!**

As has already been stated, the alternative character set you have designed is held in RAM at addresses starting at 64600. It should be pointed out that RAMTOP has automatically been reset to 64599 upon loading the Character Generator, and thus programs may be loaded in below the character set at will. Also, you may press "NEW" without damaging the character set.

In order to use your character set, first save it onto tape twice, the second time being so as to improve the chances of a good save.

Switch off and switch back on again the computer and load in the character set using the following lines, either as a program, or as direct statements;

- 1) CLEAR 64599
- 2) LOAD "CODE"

Your character set is now safely back in RAM above RAMTOP. You may now write or load in the program you wish to use the character set with.

At the point where you want the computer to read the characters to be printed from your new character set, put in the following two pokes;

```
POKE 23606,88
```

```
POKE 23607, 251
```

And at the point where you want the computer to switch back to using the Sinclair character set from the ROM, put in these two Pokes;

```
POKE 23606,0
```

```
POKE 23607,60
```

You may use these Pokes as often as you like to switch between the two character sets.

## **Loading your special Character Sets**

On side 'B' of your cassette.

First type as a direct statement:

```
CLEAR 64599
```

then

LOAD "NAME", CODE 64600

Where the name is one of the following:

- 1) "Gothic"
- 2) "Computer"
- 3) "Algerian"
- 4) "US Type"
- 5) "Cut-in"
- 6) "Revue"

PLEASE NOTE: THE CHARACTER SETS PROVIDED WITH THIS CHARACTER GENERATOR ARE PROVIDED IN GOOD FAITH FOR USE BY PRIVATE INDIVIDUALS IN THEIR OWN PERSONAL PROGRAMS. THEY ARE COPYRIGHT 1983 I.S.P. MARKETING LTD AND MAY NOT BE USED FOR COMMERCIAL APPLICATIONS, NOR MAY THEY BE LENT OUT, HIRED OUT OR IN ANY WAY USED BY ANY PARTY OTHER THAN THE PURCHASER OF THE CHARACTER GENERATOR WITHOUT THE PERMISSION OF THE PUBLISHERS.

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