

Notes on P.C.G. Sampler Tape

This cassette contains a selection of programs which are intended to give you an introduction into the use of the P.C.G. (Programmable Character Generation) feature of your MicroBee computer.

The programmes on the tape are:-

(044) **PCSTUT** This is a tutorial program. When run it displays a title block and then alters the characters used for the border into pictures. The program then describes the meaning of terms used in PCG generation, and shows a grid which is meant to represent the 128 dot locations which can be programmed as OFF or ON in creating your special character. The remainder of the program is used as an EDITOR to allow you to create your own characters. The program requests that you insert any letter or letters that you wish to change into PCG characters. A word of explanation may be helpful at this point, as you are aware the computer can display the letters of the alphabet (plus numbers, punctuation, etc) in two ways; NORMAL which is a white outline on a black background, or INVERSE which is a black outline in a white background cell. These inverse characters are actually PCG shapes, the MicroBee is programmed to automatically preset the PCG array as inverse characters whenever it starts up. You as the user may elect to re define any of these characters in your program.

To continue with the tutorial, let us assume that you are going to re define the character (inverse) A. Answer the question by pressing the A key followed by the RETURN key. You will observe that the letter A is shown normally, and in its standard inverse format. A flashing star is displayed in the top left hand side of the grid. Now press the 0 (zero) key four times, notice that the cursor has moved across four cells leaving them blank. Now press the 1 (one) key four times, the cursor moves for each key press, but this time turns on the 'dot' location each time. The cursor has moved now onto the second line, and if you examine the inverse A location in the lower left of the screen you will notice that it has altered the top line to match what you entered. Continue pressing ones and zeroes until you reach the end of the grid, as each line of the grid is completed, the representation of inverse A is updated to reflect the change, and the decimal values representing the line of data are displayed. When the grid is completed a small program is displayed which shows how to display your PCG values as a character on the screen. If you entered more than one character to be changed (eg ABC) the editor will do each letter in turn.

(037) **DRAW** This program is a drawing pad, it is used to "sketch" your own patterns on the T.V. screen. There is a very nice example of PCG drawing in the opening display where the author has created a small "trademark" at the bottom of the screen. BEFORE using this program ensure that your keyboard is set to UPPER CASE. To use the program, memorise or copy down the keys used to move the dot around the screen. You may either press the keys repeatedly or simply hold the required key down and after about one second the keyboard will go into auto repeat mode. As an example, Hold down the "D" key for about 6 or 7 seconds and you should have a straight line sloping up the screen, now press the "X" key and the line will move down the screen. There is a number displayed in the upper right corner, this is a count of the number of PCG shapes that have been used to create your drawing; you have 128 shapes available for use. If you wish to move the dot without drawing a line, press the "C" key to turn off the drawing mode, then use the normal move keys to relocate the location of the dot, then press "C" again to turn the drawing mode back on again.

(056) **PCGER** This is a more advanced PCG editor than the one provided in the tutorial program. Although only one character may be edited at a time it is possible to extend the character several dots in each direction to allow you to see the joining effect with adjacent shapes. As each dot is turned on or off in the enlarged grid the "real sized" image is updated. To alter any dot in the image you simply move the two arrow pointers to point to the dot to be altered and press the space bar, if the dot was on it will turn off and vice versa. When you have finished editing the character press the "*" (star) key and the values to produce the shape will be displayed. When you initially select the character to be edited the program advises which locations to poke the data into. If you wish to edit a new shape press the ESCape key and the program will be rerun.

DEPTH This is the first of a series of games using the PCG principles shown in the previous programs. In this game a stationary aeroplane is drawn at the top of the screen and a submarine circulates at various depths below the water line. When the submarine is directly below the plane press the space bar to stop it, and enter a number between 1 and 12 to represent the depth that you wish to explode the depth charge you are about to drop. Press the return key and the depth charge will drop and explode. This game should be considered as a basis for you to experiment and expand into a full arcade type game.

FOMB This is an example of drawing PCG shapes and playing tunes. In this instance a swarm of bees is drawn in flight to the tune of "Flight of the Bumble Bee" (with due apologies to the original score).

ROULET The rules of Russian Roulette are generally well known (the sucker rarely wins). Although of little merit as a game it is included for the PCG shapes used to draw the man and the revolver. If you are sufficiently masochistic to wish to play the game just follow the instructions then press the "1" key followed by return and wait for the inevitable result.

THREED Although very slow in execution, this tiny basic program will produce a 3 dimensional representation of a terrain contour map. Try experimenting with the formulas used to produce different shapes.

GXEPT This is one of a series of small "demo" PCG programs submitted by a user, it will draw random PCG shapes in HIREG graphic mode. The interesting feature here is explained by the author in his opening remarks to the program, you may use the BASIC GX command to alter the values used and see the variation of patterns produced. You may of course prefer to directly EDIT individual values rather than make global changes.