



The Dispatch Disk

Southern Districts
Commodore Users Club inc.
News Paper.

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Next meeting : MONDAY 31st August at 7:30 pm.

Location : Salvation Army Hall Elizabeth Rd. Morphett Vale.
Subject : Cockroach Graphics Pirate.

September:-
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PRINT SHOP/PRINT MASTER PROGRAMS PT 3

This is the last of three articles on the Print Shop and Print Master programs. This article will present the Printshop graphics print programme.

I will assume that you have read last months article on the format of the various graphics. If you have not then get a copy of the June Dispatch disk from Rob.

This is a Printshop print programme, but it would be simple to modify it to print Printmaster graphics. It will only print three block versions, not the two block graphics.

As we discussed last month the graphics are stored in 52 rows of 88 picture elements or pixels. The print head in the printer is eight vertical pins and so prints eight rows at a time. To print the graphic this programme must take the first pixel of the first eight rows of the graphic and send them to the printer, then take the second pixel of the first eight rows and send them to the printer, then take the third pixel of the first eight rows and so on.

So much for the easy bits, it is time to reengage the neurons. As we said above the print head uses eight vertical pins. These pins are numbered from bottom to top. The information for the pins is encoded in the following way. The total number of combinations of pins printing or not is 256. This figure should sound familiar to those who read last months article since it is the number of values that a byte can have. We said last month that one byte can represent eight pixels, now we see that the same unit of information, the byte, can represent the pins on the print head. Let us say that we have found eight pixels that we wish to print. We can say that each pixel has a value depending on the pin in the print head which it will activate. The bottom pin has the value 2^0 , the next pin 2^1 , the next pin 2^2 , and so on until the top pin which has a value of 2^7 . We add the values of the pixels which we wish to print and this becomes the number we send to the printer to print this combinations of pixels. The table below should make this a little clearer.

	<u>PINEL ON/OFF</u>	<u>PIN VALUE</u>	<u>PINEL VALUE</u>
For this pin combination the top pin, third and fourth pin down and the bottom two pins will print. To do this the number 155 will be sent to the printer. If all pins are to print then the value 255 will be sent to the printer.	ON	$2^7 = 128$	128
	OFF	$2^6 = 64$	0
	OFF	$2^5 = 32$	0
	ON	$2^4 = 16$	16
	ON	$2^3 = 8$	8
	OFF	$2^2 = 4$	0
	ON	$2^1 = 2$	2
	ON	$2^0 = 1$	1

TOTAL			155
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PROGRAMME DESCRIPTION

The programme begins with the data statements containing all of the names of the graphics to be printed. These are from lines 99 to 310.

LINE	DESCRIPTION
320-335	Dimension the arrays to hold the bytes read from the disk A, bytes to be sent to the printer NBYTE, and the decomposed pixels BIT.
340-345	The name of the graphic is read. The value 43 in this loop is the number of graphics named in the data statements. This loop ends at line 600.
350-355	Open the file for access.
360-365	Read off first two bytes before reading data.
370-390	Read data from the disk file into the array A and close the disk file.
395-420	Separate each byte into eight pixels and store them in the array BIT.
496-520	Load the pixels into the bytes to be sent to the printer.
545-546	Open the printer and print the name of the graphic.
550-555	Set up the printer for printing graphics.
560-586	Print the graphic.
590	Reset the printer.
595	Close the printer.

J.H. With special thanks to G.D.

99 DATA "CROWNS"
100 DATA "TILT"
105 DATA "SPARECHANGE"
110 DATA "GUMBALL"
115 DATA "AE"
120 DATA "THIEF"
125 DATA "CROOK"
130 DATA "LODE"
135 DATA "KARATEKA"
140 DATA "MARIKO"
145 DATA "AKUMA"
150 DATA "GOODNIGHT"
155 DATA "TRUCK"
160 DATA "BLAM"
165 DATA "SKULL"
170 DATA "DROLBOY"
175 DATA "CHOPLIFTER"
180 DATA "SCREENMAGIC"
185 DATA "PRINTER"
190 DATA "DAZZLE EYE"
195 DATA "LO"
200 DATA "L1"
205 DATA "L2"
210 DATA "L3"
215 DATA "L4"
220 DATA "L5"
225 DATA "L6"
230 DATA "L7"
235 DATA "L8"
240 DATA "L9"
245 DATA "R0"
250 DATA "R1"
255 DATA "R2"
260 DATA "R3"
265 DATA "R4"
270 DATA "R5"
275 DATA "R6"

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280 DATA "R7"
285 DATA "R8"
290 DATA "R9"
295 DATA "ST"
300 DATA "ND"
305 DATA "RD"
310 DATA "TH"
315 REM***START MAIN PROGRAM***
320 DIMA(600) :REM OLD BYTE
325 DIM NBYTE(616)
335 DIM BIT(4928)
340 FORC=1TO43
345 READN$
350 NA$="O: "+N$+", P, R"
355 OPEN8, 8, 8, NA$
360 GET#8, A$:REM IGNOR LOAD ADDRESS
365 GET#8, A$:REM IGNOR LOAD ADDRESS
370 FORX=0TO571
375 GET#8, A$: IFA$="" THENA$=CHR$(0)
380 A(X)=ASC(A$)
385 NEXT
390 CLOSE8
395 PRINT"REM***BYTES TO BITS
400 FOR Y=0TO571
405 FORX=0TO7
410 BIT(Y*8+X)=A(Y)AND(128/(2^X))
415 IF BIT(Y*8+X)>0THENBIT(Y*8+X)=1
420 NEXTX, Y
430 REM
435 REM
440 REM
490 REM
496 REM*****INITIALIZE NBYTE(X)
497 FORX=0TO615
498 NBYTE(X)=0
499 NEXT X
500 PRINT"REM*****ADD UP NEW BYTES
501 FORZ=0TO528 STEP88
505 FORX=0TO87
510 FORY=0TO7
515 NBYTE(X+Z)=NBYTE(X+Z)+BIT(X+704*INT(Z/88)+Y*88)*128/(2^Y)
520 NEXT Y, X, Z
525 REM
535 REM
540 PRINT"REM*****PRINT ROUTINE
545 OPEN4, 4, 4
546 PRINT#4, N$
550 PRINT#4, CHR$(27)"1";
555 A$=CHR$(27)+"L"+CHR$(88)+CHR$(0)
560 FOR Y=0TO528 STEP 88
565 PRINT#4, A$;
568 NT$=""
570 FOR X=0TO87
573 NT$=NT$+CHR$(NBYTE(X+Y))
580 NEXTX
585 PRINT#4, NT$
586 NEXTY
590 RS$=CHR$(27)+"@"
595 PRINT#4, RS$:PRINT#4:CLOSE4
600 NEXT C

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READY.

Errata:

Please note that the preceeding program om "Printshop Graphics" will only work on 3 block graphics.

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Disks:

Don't forget that blank disks are available with either black or coloured jackets. See either John or Ken.

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NOTES:

