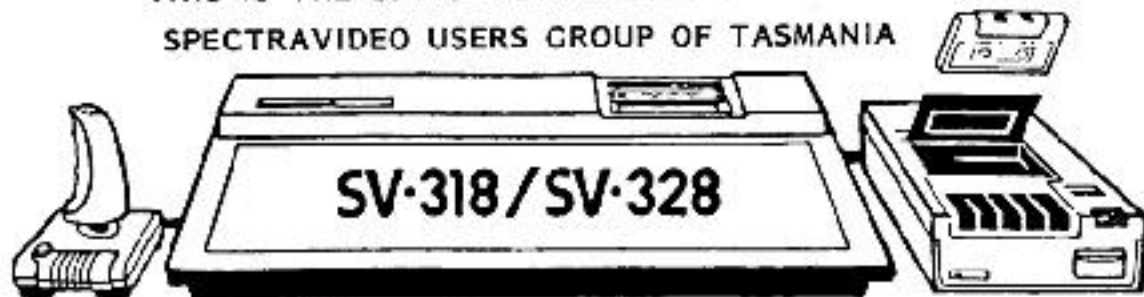


SPECTRAVIDEO

THIS IS THE OFFICIAL NEWSLETTER FOR THE
SPECTRAVIDEO USERS GROUP OF TASMANIA



News Letter

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COMPUTER USERS GROUP OF TASMANIA

FROM THE EDITOR

Welcome to 1984, I hope you all had a very happy New Year.

As you will notice we are now producing the News Letter on a word processor and a Printer. This we hope will improve the quality of our publication. We have had some trouble previously with listings when we typed them from the VDU Screen to a normal typewriter. You will read more about that later.

I wish to give special thanks to Mr Larry Dunning and Mr Steve Lane who have given some major articles for this months News Letter.

Finally Could Members please contact the Outlets where they purchased their Computers from and ask them to drop the Users Group a Line as we would like to keep them up to date with goings on in the group so that they can pass this information on to new purchasers of SpectraVideo Computers.

APPOLOGY TO VIDEOACTIV

In the November Issue of our newsletter we published a letter from Mr M Dodd. In the letter he made comment of the possibility of Videoactiv dropping the SpectraVideo Computer after 1983.


THIS IS COMPLETELY WRONG

We wish to appologise to Videoactiv for printing this and to thank them for bringing it to our attention.

Videoactiv has promoted the SpectraVideo Computer well and we are very pleased that they have no intention of dropping the machine.

THE JP-80 PRINTER

The following is a sample print from the JP-80 printer the User Group is now using for the News Letter.

! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; (=) ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z I \] ^ _ ` a b c d e f g h i j k l m n o
p q r s t u v w x y z () ~ @ £ ¢ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾ ¿
Q R S T U V W X Y Z I \] ^ _ ` a b c d e f g h i j k l m n o p q r s t u v w x y z () ~ @ 

SPECTRAVIDEO

COMPUTER USERS GROUP OF TASMANIA

OPEN SESAME

by : Larry Dunning, W.A.

One statement not discussed in either the user's manual or quick reference guide is the OPEN statement. This is a serious omission as you cannot save or recall data on tape without using it! The new reference book (as promised by the agents) may solve this, however if you cannot wait read this article.

To store or retrieve data on an external device a file must be opened. There are basically two types of files, sequential access (in which data is stored as a series of strings) and random access (in which each entry is independent of any other). This article will deal with the former.

Each file will require memory for a buffer area in which to send/recieve data. The maximum memory used can be set by using the MAXFILES statement. The format is MAXFILES=n, where "n" is the most number of files used at any one time. Normally this is set to 1 for a cassette system.

To use a file it must first be OPENed. With sequential files there are two types - output (for sending data to the device) & input (for receiving data from the device). The format is OPEN name FOR type AS #n, where name is the filename, type is either INPUT or OUTPUT, and "n" is the buffer number. The name is made from 3 parts - "aaa:bbbbbb.ccc" where aaa is the device name, bbbbbb is the file name and ccc is the extention. Device names and allowable file types I know of are as follows:

NAME	DEVICE	TYPE ALLOWED
KYBD	Keyboard	Input
LPT	Printer	Output
CRT	Screen	Output
1	Disk 1	Input/Output
2	Disk 2	Input/Output
CAS	Cassette	Input/Output

If no device name is listed, CAS is assumed. The filename can be any combination of characters (up to six) provided the first is alphanumeric and "." is not used. For immediate purposes the extention is optional and may be dropped from the name. The buffer number may be any number not more that that specified in the MAXFILES statement.

To send information to the device the PRINT# statement is used. Format is PRINT#n,data,data,... ..data, where n is the buffer number & data is the information sent. This can be any variable. Either "," or ";" can be used as separators for data however it should be born in mind that the image produced on the device will be similar to that on the screen after a normal PRINT statement. Thus a "," will produce a tab and ";" may not be reproduced in the resulting image. A way around this problem is insert "i"; between variables.

To receive information from a device the INPUT# statement is used. The format is INPUT#n,aa,bb,cc,dd... ..zz where n is the buffer used and aa to zz are the variables used to recieve data. The order and type of variables used obeys the same rules as the READ statement. A buffer opened for INPUT cannot be used for OUTPUT. A variation of INPUT# is INPUT\$. The format is xx\$=INPUT\$(1,#n) where xx\$ is the recieving string variable, 1 is the length of the incoming data & n is the buffer used.

A buffer OPENed for input cannot be OPENed for output, or vice versa. to circumvent this problem the CLOSE statement is used. The format is CLOSE n,o,p,... ..z where n to z are the buffers to be closed. If no arguments are used, all buffers are closed. Once a buffer is closed, it may be reOPENed using some other format.

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COMPUTER USERS GROUP OF TASMANIA

LETTER TO THE EDITOR

by : R.J. Moore, Vic.

Dear Sir,

Could you help me. I require the S.V. equivalent to
RANDOMIZE N
& X=Z+N(INT(RND*9+1))
or N=INT(RND*10)+1
Thirdly RND>.1

Also could you give me an explanation of TIME and a routine for the application of the joystick ports.

Yours faithfully
R.J. Moore.

Well R.J., I hope the following is of some use to you.
Instead of using RANDOMIZE try X=RND(-TIME)

The RND function relies on an expression in brackets.
RND(exp) < 0 seed newsequence
 = 0 return previous random number
 > 0 return new random number.

For example to randomize a number between 0 and 99 try the following:
X=INT(RND(1)*100)

Joystick ports are assigned as follows:

STICK(0) & STRIG(0) = CURSOR CONTROL AND SPACE BAR
STICK(1) & STRIG(1) = JOYSTICK PORT 1
STICK(2) & STRIG(2) = JOYSTICK PORT 2

Try this short program:

```
10 IF STICK(0)=0 GOTO 40
20 PRINT STICK(0)
30 GOTO 10
40 IF STRIG(0)=0 GOTO 70
50 BEEP
60 GOTO 10
70 PRINT "NIL"
80 GOTO 10
90 END
```

Joystick directions are as follows:

```
0 1 2
  \!/
7-0-3
  /!\
6 5 4
```

All the above information is also in the Personal Computer Quick Reference Guide. If you did not receive this book with your computer you should contact the shop you bought your computer from.

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COMPUTER USERS GROUP OF TASMANIA

CP/M COLOR CHANGE

by : P. Deckert, TAS.

I use CP/M on my 40 character screen, and it took very little time for me to get sick of WHITE characters on a BLUE background so I decided to do something about it.

The color of the screen is set by sending a number to the Video Chip the high byte is the foreground color and the low byte is the background color. To explain if you sent 81 to the Video Chip you get a Character 8 on a background 1 to translate 8 = red & 1 = black, So to get a reasonable GREEN screen you would send a C1 to the Video Chip. C in HEX = 12 in Decimal.

Following this you then send an 87 to tell the Video Chip to switch to the selected colors.

The port to send this to is number 81. So to the simple program.

```
MVI A,C1
OUT 81
MVI A,87
OUT 81
RET
```

Use DDT and the A100 command to create the simple program and then SAVE 1 GREEN.COM or what ever color you decide to use. Thus when you type GREEN your display turns to green.

Just change the C1 to any color combination you want, see table below :

```
1 = BLACK
2 = MEDIUM GREEN
3 = LIGHT GREEN
4 = DARK BLUE
5 = LIGHT BLUE
6 = DARK RED
7 = CYAN
8 = MEDIUM RED
9 = LIGHT RED
A = DARK YELLOW
B = LIGHT YELLOW
C = DARK GREEN
D = MAGENTA
E = GRAY
F = WHITE
```

So for example to get CYAN Characters on a DARK GREEN Background you would put 7C in the program.

For those HACKERS who know what they are doing you can SYSGEN CP/M from the disk save it as SAVE 40 CPM.COM and then DDT it back into Memory. Then using the A command you can enter the above program directly into the BIOS at location 247A, but dont add the RET. Then type G100 and put the modified CP/M back. The Screen will then change color when the disk is Cold Booted.

SPECTRAVIDEO

COMPUTER USERS GROUP OF TASMANIA

3D PLOTS REVISITED

Well folks we goofed it. In the NOVEMBER issue of the News Letter We published a program to draw 3D Graphics on the screen and save them on disk.

Well the program we recieved worked but was a bit rough. Also at that time we still had to type the News Letter by hand. So one of our members decided to "FIX" the program a bit while he was typing it onto the master News Letter Page.

Would you believe it it does not work!!!!. We appologise to any member who had trouble with the program. We make ammends in this edition with the working version and also wish to thank Mr S Lane for his 3D plot program which is even better than the original.

```
10 DEFNSG A-Z
20 DEF FNG(X)=(X-1)*SIN(X*12)
30 INPUT "Do you want t save this Screen :";SF#
40 IF LEFT$(SF#,1)="y" THEN SF=-1 : GOSUB 320 : GOTO 70
50 INPUT "Do you want to Load a Screen :";LF#
60 IF LEFT$(LF#,1)="y" GOTO 290
70 '
80 SCREEN 1
90 H=256 : V=192 : ST=1 : VS=H/10
100 X1=H/2 : X2=X1*X1 : Y1=V/2 : Y2=V/4
110 FOR X=0 TO X1 STEP ST
120 X4=X*X
130 M=-Y
140 A=SQR(X2-X4)
150 FOR I=-A TO A STEP VS
160 R=SQR(X4+I*I)/X1
170 F=FNG(R)
180 Y=I/5+F*X2
190 IF Y<=M GOTO 240
200 M=Y
210 Y=Y1-Y
220 PSET (X1-X,Y)
230 PSET (X1+X,Y)
240 NEXT I,X
250 IF SF THEN SAVE "1:"*FT#,S
260 BEEP
270 IF INKEY#="" GOTO 270
280 GOTO 350
290 GOSUB 320
300 LOAD "1:"*FT#
310 GOTO 260
320 PRINT
330 INPUT "FILENAME :";FT#
340 RETURN
350 END
```

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3D PLOT VERSION 2

by : S. Lane, VIC.

```
11 '          3D PLOTTING
12 '          by Steve Lane
13 '
14 '      delete the rem from the line
15 '      with the function you wish
16 '      to plot. (lines 100 to 150)
30 '
90 DEFNG A-Z
100 REM DEF FNA(A)=(SIN(X/3)*2)^3+(SIN(Y/3)*2)^3
110 REM DEF FNA(A)=1/(COS(X/2)*COS(Y/2)+1.1)
120 REM DEF FNA(A)=1/(COS(X)*SIN(Y)+1.1)
130 REM DEF FNA(A)=1.5/(COS(X)*SIN(Y/2)+1.1)
140 DEF FNA(A)=1.5/(COS(X)*SIN(Y/3)+1.1)
150 REM DEF FNA(A)=1/(SIN(X)*SIN(X)*SIN(Y)+1.1)
155 ON ERROR GOTO400
160 SCREEN1
170 ST=16:YS=100:MP=6
180 FORY=.25TO8STEP.25
190 X=0: PSET(ST*(Y+X),YS-((Y-X+2+FNA(A))*MP))
200 FORX=0TO8STEP.25
210 LINE-(ST*(Y+X),YS-((Y-X+2+FNA(A))*MP))
220 NEXTX,Y
230 FORX=0TO8STEP.25
240 Y=0: PSET(ST*(Y+X),YS-(Y-X+2+FNA(A))*MP),C
250 FORY=0TO8STEP.25
260 LINE-(ST*(Y+X),YS-(Y-X+2+FNA(A))*MP),C
270 C=15
280 NEXTY,X
290 IF INKEY$=""THEN 290
300 END
400 SCREEN0:CLS:LIST-150
```

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'BLITZ' a Game Program

by : T. Cruise, TAS.

```
10 *           BLITZ
20 *           -----
30 *           BY TONY CRUISE           (7010)
40 *
50 DEFINT A-Z
60 CLICK OFF
70 A1=RND(-TIME)
80 COLOR 15,1,1:CLS:CLEAR 1000:DIM LW*(3),RW*(3),X(5),Y(5):HI=2000
90 FOR A=1 TO 32:READ B:E#=E#+CHR*(B):NEXT
100 FOR A=1 TO 3:FOR A1=1 TO 16:READ B:LW*(A)=LW*(A)+CHR*(B):NEXT
110 FOR A1=1 TO 16:READ B:RW*(A)=RW*(A)+CHR*(B):NEXT:NEXT
120 FOR A=1 TO 24:READ B:B#=B#+CHR*(B):NEXT
130 FOR A=1 TO 24:READ B:S#=S#+CHR*(B):NEXT
140 FOR A=1 TO 8:READ B:S1#=S1#+CHR*(B):NEXT
150 SCREEN 1,2:SPRITE*(0)=S#:SPRITE*(1)=S1#:SPRITE*(2)=E#:SPRITE*(3)=B#
160 FOR A=1 TO 3:SPRITE*(A+3)=LW*(A):SPRITE*(A+6)=RW*(A):NEXT
170 CLS:FOR B=1 TO 50:PSET(INT(RND(1)*255)+1,INT(RND(1)*192)+1):NEXT:A#=INKEY$
180 LINE (0,188)-(256,192),12,BF
190 GG=0:SC=0
200 PUT SPRITE 1,(120,180),5,0:PUT SPRITE 2,(144,100),5,1
210 PUT SPRITE 3,(120,30),15,4:PUT SPRITE 4,(136,30),9,2:PUT SPRITE 5,(152,30),1
5,7
220 LOCATE 100,100:PRINT"PRESS ANY KEY":LOCATE 100,60:PRINT"HIGH SCORE="HI
230 PUT SPRITE6,(100,130),15,5:PUT SPRITE 7,(100,130),9,2:PUT SPRITE 8,(124,130)
,15,8
240 IF INKEY$="" THEN 240 ELSE CLS:SC=0:W=1
250 RESTORE 840:FOR A=1 TO 5:READ X(A),Y(A):NEXT
260 LINE(100,100)-(160,100),1,BF
270 IF GG=1THEN350
280 GG=1
290 LINE(100,100)-(160,100),1,BF
300 FOR B=1 TO 50:PSET(INT(RND(1)*255)+1,INT(RND(1)*192)+1),14*RND(1)+1:NEXT:A#=
INKEY$
310 LINE (0,188)-(256,192),12,BF
320 CIRCLE (40,20),50,4:PAINT(40,20),4
330 CIRCLE (200,50),10,12:PAINT(200,50),12:LINE (160,40)-(220,51),9,BF
340 CIRCLE (130,90),5,11:PAINT(130,90),11
350 FOR A=1 TO 5:PUT SPRITE A*3,(X(A),Y(A)),15,4:PUT SPRITE A*3+1,(X(A)+8,Y(A)),
9,2
360 PUT SPRITE A*3+2,(X(A)+24,Y(A)),15,7:NEXT:E=6:T=0:B=0:B1=0:P=128:PUT SPRITE
1,(P,180),5,0:PUT SPRITE 2,(P+16,180),5,1
370 IF T=1 THEN 400
380 E=E-1:IF E=0 THEN 050
390 X=X(E):Y=Y(E):T=1
400 X=X+(5+W)*(2-INT(RND(1)*4)):IF X<5 THEN X=255 ELSE IF X>255 THEN X=5
410 Y=Y+(5+W):IF Y>170 THEN GOSUB 070
420 PUT SPRITE E*3,(X,Y),15,5:PUT SPRITE E*3+1,(X+8,Y),9,2:PUT SPRITE E*3+2,(X+2
4,Y),15,8
430 IF B=1 THEN Y1=Y1+6+W:IF Y1>175 THEN 920 ELSE PUT SPRITE 10,(X1,Y1),10,3
440 IF B1=1 THEN Y2=Y2+6+W:IF Y2>175 THEN 940 ELSE PUT SPRITE 17,(X2,Y2),10,3
450 A=STICK(0)+STICK(1):IF A=3 THEN P=P+8:IF P>240 THEN P=240
460 IF A=7 THEN P=P-8:IF P<10 THEN P=10
```


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```
470 PUT SPRITE 1, (P, 100), 5, 0: PUT SPRITE 2, (P+16, 100), 5, 1
480 IF STRIG(0)+STRIG(1)=-1 THEN A#=" *ELSE570
490 LINE (P+12, 100)-(P+12, 100): BEEP: PLAY "O4L20M1000S12N40"
500 IF Y<100 THEN 520
510 IF P+12>X+4 AND P+12<X+20 THEN SC=SC-20: SOUND6, 0: SOUND7, 1: PLAY "L901S15V15M10
C": T=0: PUT SPRITE E*3, (1, 209): PUT SPRITE E*3+1, (1, 209): PUT SPRITE E*3+2, (1, 209):
GOTO 560
520 IF Y1<100 THEN 540
530 IF P+12>X1-2 AND P+12<X1+16 THEN SC=SC+5: B=0: PUT SPRITE 18, (1, 209): GOTO 560
540 IF Y2<100 THEN 560
550 IF P+12>X2-2 AND P+12<X2+16 THEN SC=SC+5: B1=0: PUT SPRITE 19, (1, 209)
560 LINE (P+12, 100)-(P+12, 100), 1
570 IF T=1 THEN 600
580 E=E-1: IF E=0 THEN 850
590 X=X(E): Y=Y(E): T=1
600 X=X+(5+W)*(2-INT(RND(1)*3)+1): IF X<5 THEN X=255 ELSE IF X>255 THEN X=4
610 Y=Y+(5+W): IF Y>170 THEN GOSUB 070
620 PUT SPRITE E*3, (X, Y), 15, 6: PUT SPRITE E*3+1, (X+8, Y), 9, 2: PUT SPRITE E*3+2, (X+2
4, Y), 15, 9
630 IF B=0 AND RND(1)+W/10>.85 THEN X1=X: Y1=Y: B=1: PUT SPRITE 18, (X1, Y1), 10, 3
640 IF B1=0 AND RND(1)+W/10>.85 THEN X2=X: Y2=Y: B1=1: PUT SPRITE 19, (X2, Y2), 10, 3
650 A=STICK(0)+STICK(1): IF A=3 THEN P=P+8: IF P>240 THEN P=240
660 IF A=7 THEN P=P-8: IF P<10 THEN P=10
670 PUT SPRITE 1, (P, 100), 5, 0: PUT SPRITE 2, (P+16, 100), 5, 1
680 IF INKEY#(">") THEN A#="INKEY#": GOTO 370
690 LINE (P+12, 100)-(P+12, 100): PLAY "L20M1000S12N40"
700 IF Y<100 THEN 720
710 IF P+12>X+4 AND P+12<X+24 THEN SC=SC+20: T=0: PUT SPRITE E*3, (1, 209): PUT SPRIT
E E*3+1, (1, 209): PUT SPRITE E*3+2, (1, 209)
720 IF Y1<100 THEN 740
730 IF P+12>X1-2 AND P+12<X1+16 THEN SC=SC+5: B=0: PUT SPRITE 18, (1, 209): GOTO 760
740 IF Y2<100 THEN 760
750 IF P+12>X2-2 AND P+12<X2+16 THEN SC=SC+5: B1=0: PUT SPRITE 19, (1, 209)
760 LINE (P+12, 100)-(P+12, 100), 1: GOTO 370
770 DATA 3, 15, 63, 127, 127, 127, 255, 227, 227, 227, 99, 99, 127, 63, 7, 0, 192, 240, 252, 254, 25
4, 254, 255, 199, 199, 199, 198, 198, 254, 252, 224, 0
780 DATA 0, 0, 0, 0, 0, 0, 0, 0, 14, 31, 28, 24, 16, 16, 16, 16, 0, 0, 0, 0, 0, 0, 0, 0, 112, 246, 56, 24, 0
, 8, 8, 8
790 DATA 240, 112, 56, 248, 124, 62, 255, 30, 7, 0, 0, 0, 0, 0, 0, 0, 15, 14, 28, 31, 62, 124, 255, 120
, 224, 0, 0, 0, 0, 0, 0, 0
800 DATA 0, 0, 0, 0, 0, 0, 0, 7, 30, 255, 62, 124, 248, 56, 112, 240, 0, 0, 0, 0, 0, 0, 0, 224, 120, 255,
124, 62, 31, 28, 14, 15
810 DATA 66, 66, 38, 27, 15, 7, 3, 1, 0, 0, 0, 0, 0, 0, 0, 66, 66, 100, 216, 240, 224, 192, 120
820 DATA 0, 0, 12, 15, 31, 63, 127, 255, 0, 0, 0, 0, 0, 0, 0, 24, 60, 60, 255, 255, 255, 231, 129
830 DATA 0, 0, 48, 240, 248, 252, 254, 255
840 DATA 20, 20, 130, 35, 200, 5, 00, 50, 170, 65
850 BEEP: PLAY "L403A#": PLAY "05B#": PLAY "07C#": PLAY "A#"
860 W=W+1: LOCATE 100, 100: PRINT "BONUS "50*(W-1): SC=SC+50*(W-1): FOR A=1 TO 1000: NE
XT: GOTO 250
870 IF X>P-4 AND X<P+24 THEN 890
880 Y=5: RETURN
890 LOCATE 100, 100: PRINT "GAME OVER": LOCATE 100, 120: PRINT "SCORE="SC
900 IF SC>HI THEN BEEP: BEEP: HI=SC
910 FOR A=1 TO 2000: NEXT: A#="INKEY#": GOTO 170
920 IF X1>P-4 AND X1<P+24 THEN 890
930 B=0: PUT SPRITE 18, (1, 209): GOTO 440
940 IF X2>P-4 AND X2<P+24 THEN 890
950 B1=0: PUT SPRITE 19, (1, 209): GOTO 440
1000 END
```

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COMPUTER USERS GROUP OF TASMANIA

THE 'CIRCLE' PROGRAM

by : S. Lane, VIC.

The following program called CIRCLE shows hires capabilities and short commings.

```
10 '      CIRCLE
20 '      =====
30 '
40 '      By S. Lane.
50 '
60 DEFSNG A-Z
70 SCREEN 1
80 X=0
90 Y=0
100 Z=3.14159/2
110 A=128
120 B=96
130 C=80
140 D=.5
150 E=1E-12
160 FOR X=E TO Z STEP .02
170 Y=Y+1
180 IF Y>15 THEN Y=0
190 CIRCLE (A,B),C,Y,,,TAN(X)/D
200 NEXT X
210 CIRCLE (A,B),C,15*RND(8),,,,RND(7)/RND(4)
220 PLAY CHR$(97+7*RND(5))
230 GOTO 210
240 END
```

WARNING!! Printer Owners

Beware !! If you do not watch the sequence in which you turn on your computer and its peripherals you could end up like me.

One Sunday afternoon I was happily programming when I decided to list my new creation on my new printer. So I turned on the printer and !!BANG!!, no more computer. There must have been a power spike or similar that blew some vital part on my 328 into oblivion. It had to be returned to Videoactiv for repair.

From now on I turn my computer on in a strict sequence.

- 1: PRINTER
- 2: VIDEO MONITOR
- 3: EXPANDER
- 4: COMPUTER

SPECTRAVIDEO

COMPUTER USERS GROUP OF TASMANIA

THE "IPL" COMMAND

by : Yø Ed, TAS.

The IPL command is used with the SPECTRAVIDEO BASIC Disk and is used to give a command to the Basic when a Disk is initially booted.

To use, create a normal Basic Master Disk as shown in the manual and do the following.

Save a program on the Disk eg. SPECTRON then use the IPL command to tell the Basic to run the program every time the disk is booted.

EG:

```
SAVE "1:SPECTRON"
```

```
IPL "RUN"+CHR$(34)+"SPECTRON"
```

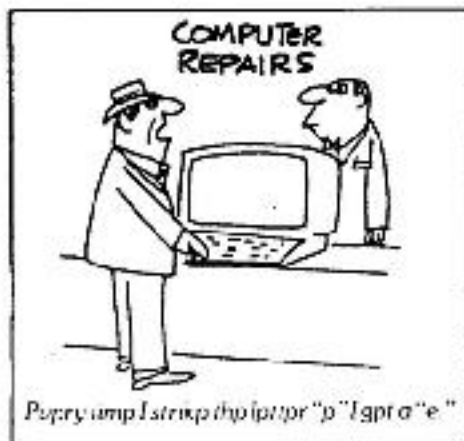
Or if you just want a DIRECTORY of your disk when you first boot it try :

```
IPL "FILES"
```

Any valid Basic command can be used in the IPL command as long as it is surrounded by Quotes (").

Alter your user definable keys to something disk based :

```
IPL "KEY1"+CHR$(34)+" files"+chr$(13)
```



SPECTRAVIDEO

COMPUTER USERS GROUP OF TASMANIA

BASIC RESERVED WORDS

by : S. Lane, VIC.

Basic reserved words are stored in memory in tokenised form. That means that instead of PRINT being stored in memory 91H is stored instead. This saves memory and makes programs execute faster. These numbers are converted back to normal text when you LIST a program.

So to get a view of the RESERVED words all we have to do is poke these numbers into memory in such a way that basic thinks it is a program and then LIST it out.

The result is copied below and makes interesting reading. There seem to still be commands that have not been mentioned in manuals. For Example: DIAL , MDM , PAD.

TOKEN			TOKEN			TOKEN		
DEC	HEX	KEYWORD	DEC	HEX	KEYWORD	DEC	HEX	KEYWORD
128	80		129	81	END	130	82	FOR
131	83	NEXT	132	84	DATA	133	85	INPUT
134	86	DIM	135	87	READ	136	88	LET
137	89	GOTO	138	8A	RUN	139	8B	IF
140	8C	RESTORE	141	8D	GOSUB	142	8E	RETURN
143	8F	REM	144	90	STOP	145	91	PRINT
146	92	CLEAR	147	93	LIST	148	94	NEW
149	95	ON	150	96	WAIT	151	97	DEF
152	98	POKE	153	99	CONT	154	9A	CSAVE
155	9B	CLOAD	156	9C	OUT	157	9D	LPRINT
158	9E	LLIST	159	9F	CLS	160	A0	WIDTH
161	A1	ELSE	162	A2	TRON	163	A3	TROFF
164	A4	SWAP	165	A5	ERASE	166	A6	ERROR
167	A7	RESUME	168	A8	DELETE	169	A9	AUTO
170	AA	RENUM	171	AB	DEFSTR	172	AC	DEFINT
173	AD	DEFSNG	174	AE	DEFDBL	175	AF	LINE
176	B0	OPEN	177	B1	FIELD	178	B2	GET
179	B3	PUT	180	B4	CLOSE	181	B5	LOAD
182	B6	MERGE	183	B7	FILES	184	B8	LSET
185	B9	RSET	186	BA	SAVE	187	BB	LFILES
188	BC	CIRCLE	189	BD	COLOR	190	BE	DRAW
191	BF	PAINT	192	C0	BEEP	193	C1	PLAY
194	C2	PSET	195	C3	PRESET	196	C4	SOUND
197	C5	SCREEN	198	C6	VPOKE	199	C7	KEY
200	C8	CLICK	201	C9	SWITCH	202	CA	MAX
203	CB	MON	204	CC	MOTOR	205	CD	BLOAD
206	CE	BSAVE	207	CF	MDM	208	D0	DIAL
209	D1	DSKO*	210	D2	SET	211	D3	NAME
212	D4	KILL	213	D5	IPL	214	D6	COPY
215	D7	CMD	216	D8	LOCATE	217	D9	TO
218	DA	THEN	219	DB	TAB(220	DC	STEP
221	DD	USR	222	DE	FN	223	DF	SPC(
224	E0	NOT	225	E1	ERL	226	E2	ERR
227	E3	STRING*	228	E4	USING	229	E5	INSTR
230	E6	'	231	E7	VARPTR	232	E8	CSRLIN
233	E9	ATTR*	234	EA	DSKI*	235	EB	OFF
236	EC	INKEY*	237	ED	POINT	238	EE	SPRITE

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239	EF	TIME	240	F0	>	241	F1	=
242	F2	<	243	F3	*	244	F4	-
245	F5	x	246	F6	/	247	F7	^
248	F8	AND	249	F9	OR	250	FA	XOR
251	FB	EQV	252	FC	IMP	253	FD	MOD
254	FE	\						

All 255 (FFH) Tokens are followed by a second byte which is interpreted as follows:

TOKEN			TOKEN			TOKEN		
DEC	HEX	KEYWORD	DEC	HEX	KEYWORD	DEC	HEX	KEYWORD
128	80		129	81	LEFT*	130	82	RIGHT*
131	83	MID*	132	84	SGN	133	85	INT
134	86	ABS	135	87	SQR	136	88	RND
137	89	SIN	138	8A	LOG	139	8B	EXP
140	8C	COS	141	8D	TAN	142	8E	ATN
143	8F	FRE	144	90	INP	145	91	POS
146	92	LEN	147	93	STR*	148	94	VAL
149	95	ASC	150	96	CHR*	151	97	PEEK
152	98	VPEEK	153	99	SPACE*	154	9A	OCT*
155	9B	HEX*	156	9C	LPOS	157	9D	BIN*
158	9E	CINT	159	9F	CSNG	160	A0	CDBL
161	A1	FIX	162	A2	STICK	163	A3	STRIG
164	A4	PDL	165	A5	PAD	166	A6	BSKF
167	A7	FPOS	168	A8	CVI	169	A9	CVS
170	AB	CVD	171	AC	EOF	172	AD	LOC
173	AE	LOF	174	AF	MKI*	175	B0	MKS*
176	B1	MKD*						



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LIBRARY NEWS

Following is the latest list of programs for the User Group Library. Some new programs for the User Group this month are worth looking into. Firstly SKYBASE is fun and has excellent graphics. DISASSEMBLER is similar to the Disassembler published in last months News Letter, so if you are not up to typing it in this one is well worth it as it's output is tailored for the SPECTRAVIDEO display. Finally CRUNCH is a program for you Disk Owners, it takes a BASIC program and removes REMS, Spaces and Concatenates all possible lines. IE:

```
5 PRINT "HELLO"  
10 G = G+1
```

Becomes:

```
5 PRINT"HELLO":G=G+1
```

NEWSLETTER PROGRAMS

The Library will now offer the following service to Members.

If members send the Library a Blank Cassette and a 30c Stamp the library will send any program that has been listed in the News Letters. ADDER, BLITZ E.T.C. This will we hope help any members that still have trouble with programs.

SEND TO:

S.V. LIBRARY,
P.O. Box 191,
South Launceston,
TAS. 7250.

SKYBASE: The Program Author: T. Cruise

Shoot two waves of INVADERS and then dock with your MOTHERSHIP.
With this added fire power attack the ENEMY BASE.
Wearing through the shield and hitting the GENERATORS will destroy the
BASE.

Use the Keyboard Joystick or any ATARI compatible Joystick in port 1.
Extra Ship is delivered at every 10,000 points up to a maximum of four
ships.

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CURRENT LIBRARY LIST

CASSETTE SOFTWARE	DESCRIPTION	PRICE
PAC:MAN	CHOMP, CHOMP	\$10
ELIZA	ARTIFICIAL INTELLIGENCE	\$ 7
RESCUE	GRAPHIC GAME	\$10
SKYBASE	GRAPHIC GAME	\$10
DISASSEMBLER	Basic Disassembler	\$ 2

DISK SOFTWARE	DESCRIPTION	PRICE
MFT.COM	MASS FILE TRANSFER FOR SINGLE DISK SYSTEMS	\$1.50 (PD)
XDIR.COM	EXTENDED DIRECTORY PLUS FILE SIZES	\$1.50 (PD)
ZCPR.ASM	BETTER CCP FOR CP/M DISK FULL OF INFO	\$1.50 (PD)
ADVENTURE.COM	128K ADVENTURE	\$1.50 (PD)
UNERA.COM	RECOVER ERASED FILES CP/M	\$10
DISK.COM	ALLOWS ACCESS TO DISK DIRECTORY FOR ALTERATIONS	\$10
CRUNCH.BAS	\$10 PACKS SPECTRAVIDEO BASIC PROGRAMS	

(PD) = PUBLIC DOMAIN SOFTWARE

ADD \$3 IF NO BLANK CASSETTE SENT WITH ORDER

ADD \$4 IF NO BLANK DISK SENT WITH ORDER