BASIC TOOLKIT EPROM

The Toolkit EPROM is activated from BASIC by:

POKE34,8 : POKE35,232 : P=USR(P)

The facilities available are split into three groups:

1 USR(X) calls for those functions that the user would not wish to activate by a typing error.
RENUMBER. Renumbers a BASIC program including all GOTO, GOSUB etc
APPEND. Appends a named tape file to the resident BASIC program.

2 CONTROL KEYS for those functions required in command mode
AUTO LINE NUMBER. CNTL/N prints out next consecutive line number.
SHORTHAND KEYWORDS. The character | (shift \) causes next key to print BASIC keyword
VARIABLE SEARCH. CNTL/Q lists line numbers that have chosen variable.
HEX/DEC. CNTL/Z prints decimal value of an entered hex number.
SCREEN ERASE. CNTL/A sets alpha mode and clears the screen.
CNTL/G sets graphic mode and clears the screen.

3 # COMMAND for those functions required in a BASIC program

SCREEN FILL.	#9,X	sets alpha mode and fills screen with variable X
	#10,X	sets graphic mode and fills screen with variable X
RELATIVE PLOT.	#8,X,Y	erases line relative to current position
	#7,X,Y	draws line relative to current position
	#6,X,Y	moves line relative to current position
ABSOLUTE PLOT.	#5,X,Y	erases line from current position to X,Y
	#4,X,Y	draws line from current position to X,Y
	#3,X,Y	moves line from current position to X,Y
POINT PLOT.	#2,X,Y	returns ON or OFF condition of point X,Y
	#1,X,Y	erases point at position X,Y
	#0,X,Y	plots point at position X,Y

RENUMBER is activated by a USR(X) call. Two entry points are provided:
POKE34,248 : POKE 35,233 : P=USR(P) will renumber with a base of 100 and an increment of 10.

POKE251,(line no. low) : POKE252,(line no. high) : POKE253,(inc) : POKE34,248 : POKE 35,233 : P=USR(P) will renumber with a user definable base and an increment.

APPEND is activated by POKE34,50 : POKE 35,233 : P=USR(P). This will prompt for tape speed and filename and should be replied to as for a LOAD command. The file to be appended must have all line numbers higher than those of the resident program.

AUTO LINE NUMBER is activated by pressing CONTROL N.
The line number sequence starts at 100 and increments by 10. These default conditions can be changed by :
POKE272,(line number low) : POKE273,(line number high) : POKE274,(increment)

VARIABLE SEARCH is activated by pressing CONTROL Q after entering the required variable name (or ASCII string)
AB%(CONTROL Q)

HEX TO DECIMAL CONVERSION is activated by pressing CONTROL Z after entering a FOUR DIGIT hex number.
BFF3(CONTROL Z)

SCREEN ERASE ALPHA is activated by pressing CONTROL A

SCREEN ERASE GRAPHIC is activated by pressing CONTROL G

SHORTHAND KEYWORDS are activated by pressing |(ie shift "\")

ABS	A	END	X	INT	J	NOT	;	RESTORE	:	STEP	S
AND	+	EXP	E	LEFT$	L	NULL	Z	RETURN	[	STOP	.
ASC	"	FN	F	LEN	-	ON	1	RIGHT$	R	STR$	$
ATN	9	FOR	4	LET	&	OR	O	RND	#	TAB(	B
CHR$	C	FRE	3	LIST	H	PEEK	<	RUN	=	TAN	8
CLEAR	0	GET	!	LOAD	*	POKE	>	SAVE	@	THEN	T
CONT	,	GOSUB	]	LOG	5	POS	P	SGN	'	TO	2
COS	7	GOTO	G	MID$	M	PRINT	?	SIN	6	USR	U
DATA	D	IF	%	NEW	Y	READ	/	SPC(		VAL	V
DEF	)	INPUT	I	NEXT	N	REM	K	SQR	Q	WAIT	W
DIM	(										

SCREEN FILL An example will explain better than words.

```
10 FOR I=0 TO 255 : #10,I : NEXT : #9,32
```

PLOTTING MODES have the following syntax

#Mode No(0-8),X co-ord (0-53), Y co-ord (0-63)

The three arguments can be any expression or constant that evaluates to a positive number. For example:

POINT PLOT

```
10 #10,0 : FOR I=0 TO 11
20 #0,I,31+20*SIN(I/5)
30 NEXT : WAIT49139,128 : #9,32
```

BTKIT1

ABSOLUTE

```
10 D=1 : #10,0 : FOR I=1 TO 11
20 #3,31-D,31 : #4,31,31-D
30 #4,31+D,31 : #4,31,31+D
40 #4,31-D,31 : D=D+3 : NEXT
50 WAIT49139,128 : #9,32
```

BTKIT2

RELATIVE

```
10 DATA 43, 25, 45, 17, 27, 33, 50, 5, 13, 38, 29, 41
20 #10,0
30 #3,0,83 : #4,0,0 : #4,83,0
40 FOR I=5 TO 60 STEP5 : #0,1,I : NEXT
50 #3,3,0 : FOR I=1 TO 12 : READ Y
60 #7,0,Y : #7,5,0 : #7,0,256-Y
70 NEXT : WAIT49139,128 : #9,32
```

BTKIT3

Note. Because all values must be positive it is necessary to subtract from 256 to obtain a negative relative plot.

Mode 2 will return in location 255 the condition of point X,Y. This location should be peeked immediately after use. PEEK(255)=0 if point is OFF, 255 if point is ON.