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Produkt: PC-1600
Thema: Analog-Eingang
Autor: Detlef Korhon/gw
Datum: Februar 1988

Nummer: 1600-015G
Verteiler: Händler, GVL's, ISD/DV/CAL
EXS EM, PPL RR, Service,
Adverb, Herr Krämer

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Bevor der Befehl **ON ADIN GOSUB** hundertprozentig genutzt werden kann, muß folgender Befehl in das Programm eingebunden werden.

Beispiel:

```
100 POKE &F12C, (PEEK &F12C) OR 1
110 ON ADIN (100, 200) GOSUB 1000
```

Wenn Zeile 100 nicht eingegeben wird, ist die gesetzte Abfrage des Wertes zwischen 100 und 200 nicht effektiv.

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- Software Center -

i. V. Helmut Burmeier

i. A. Detlef Korhon

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Produkt: PC-1600
Thema: PC-1600 mit CE-150
Autor: Detlef Korhon/gw
Datum: Februar 1988

Nummer: 1600-014G
Verteiler: Händler, GVL's, ISD/DV/CAL
EXS EM, PPL RR, Service
Adverb, Herr Krämer

****

Wenn man den Befehl **LLIST** mit der Konfiguration PC-1600/CE-150 ausführt, werden die Sprungadressen nicht mit ausgedruckt.

```
LLIST
10 PRINT "EIN TEST"
20 GOTO
```

Abhilfe:

Den PC-1600 in Mode 1 schalten
Eingabe: MODE 1 [ENTER]

Mit der Taste ↓ das Programm durchsehen, in welchen Zeilen Sprungbefehle (z. B. GOTO) stehen. Wenn eine Zeile mit Sprungbefehl gefunden wurde, mit dem Cursor auf die 1. Stelle hinter der Zeilennummer gehen und ENTER-Taste betätigen.
Mit der Taste ↓ Programm weiter durchgehen und nach weiteren Sprungbefehlen suchen. Wenn Sie alle Zeilen, in denen ein Sprungbefehl vorhanden ist, durchgearbeitet haben und LLIST eingeben, wird ein korrektes Listing ausgedruckt.

```
LLIST [ENTER]
10 PRINT "EIN TEST"
20 GOTO 10
```

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i. A. Detlef Korhon

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Produkt: PC-1600
Thema: LINE-BEFEHL
Autor: D. Korhon/gw
Datum: 06. August 1987

Nummer: 1600-012
Verteiler: Software-Häuser, GVL's, ISD/DV/CAL, Service, EXS EM, PPL RR

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Der LINE-Befehl ist mit einem Programmierfehler behaftet.

Für die Y-Koordinaten zwischen 127 und 255 werden keine Punkte auf dem LCD dargestellt.

Beispiel:

```
LINE (-66,-99)-(166,200)
```

Es wird keine sichtbare Linie erscheinen.

Der LINE-Befehl kann nur in dem Y-Intervall von -126 - +125 ausgeführt werden.

Sollte es nicht möglich sein, diese Y-Grenzen im Programm einzuhalten, ist folgende Unterroutine aufzurufen:

```
    10:CLS
    15:REM  ERRECHNETE BZW. FESTGELEGTE PARAMETER
    20:X1=-66:Y1=-99:X2=166:Y2=125
    25:REM  SPRUNG ZUR UNTERROUTINE
    30:GOSUB 10000
    40:END
 10000:IF (Y1MOD 256>126)AND (Y1MOD 256<256)THEN 10040
 10010:IF (Y2MOD 256>126)AND (Y2MOD 256<256)THEN 10050
 10020:LINE (X1,Y1)-(X2,Y2):RETURN
 10040:X1=(X2-X1)/(Y2-Y1)*(126-Y1)+X1:Y1=126:GOTO 10020
 10050:X2=(X2-X1)/(Y2-Y1)*(126-Y1)+X1:Y2=126:GOTO 10020
```

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i. A. Detlef Korhon

****

Produkt: PC-1600
Thema: TAB-Befehl
Autor: D. Korhon/gw
Datum: 06. August 1987

Nummer: 1600-011
Verteiler: Software-Häuser, ISD/DV/CAL, Service, EXS EM, PPL RR

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Die PC-1600 mit der Serien-Endnummer 8 zeigen ein unterschiedliches Druckverhalten, wenn Sie 1. über V24 drucken und 2. über CE-1600P. Über das CE-1600P wird der TAB-Befehl richtig ausgeführt. Sobald aber der serielle Ausgang zum Drucken benutzt wird, wird der TAB-Befehl falsch ausgeführt.

Beispiel:

```
 10 SETCOM"COM1:",1200,8,N,1,N,N
 20 SETDEV"COM1:", PO
 30 FOR I=1TO4
 40 LPRINT TAB I;I;"ANFANG"
 50 FOR X=0 TO 8
 60 LPRINT"-";
 70 NEXT X
 80 LPRINT I;"ENDE"
 90 NEXT I
100 END
```

Abhilfe:

Setzen Sie am Anfang des Programms, hier Zeile 5, folgenden Befehl:

```
5 PZONE"COM1:",0
```

Obwohl im Handbuch beschrieben wird, daß die Länge 8 nicht unterschritten werden darf, wird die 0 in diesem Fall akzeptiert.

Der PZONE-Befehl muß nur einmal am Anfang des Programms gesetzt werden.

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i. V. Helmut Burmeier

i. A. Detlef Korhon

****

Product: PC-1600
Subject: Tips, Tricks, and Supplementations to the Manual PC-1600
Author: D. Korhon/gw
Date: 22nd July, 1987

Number: 1600-010E
Distributor: Agents

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You are the possessor of a PC-1600 with CE-1600M and you would like to load a PC-1500 program which is larger than 12 KB from cassette and to use that program in question.

Normally it is not possible as the additional memory area cannot be used in the PC-1500 mode (MODE 1).

Corrective measure: First of all the memory has to be cleared by NEW0. You have correctly installed the module with INIT. Now enter
* POKE &F1BC,PEEK(&F1BC) OR 64.
Now the computer can be found in PC-1500 mode and you can use the large memory.

KEYSTAT 2

The KEYSTAT 2 command effects that all datas resp. characters which are at the RS-232-interface can directly be taken over in the program memory.

EXAMPLE:

Set PC-1600 at PRO-mode.
Enter the following lines:

```
SETCOM"COM1:",300,8,N,1     <ENTER>
SETDEV"COM1:",PO,KI         <ENTER>
OUTSTAT"COM1:",0            <ENTER>
KEYSTAT2                    <ENTER>
```

If you send now a listing to the PC-1600, no matter from which computer, but with which you can produce a serial listing, this listing will be received as program from the computer. In order to process this one, you have to enter KEYSTAT 0 ENTER .

KEYSTAT 0 = internal key
KEYSTAT 2 = communication port

DATA COMMUNICATION

In order to inform the PC-1600 of the end of data transfer or data transmission you have to send CONTROL and Z or also CHR$(26).
As soon as the PC-1600 receives one of this character it terminates data transmission.

* MODE 0 | MODE 1
128 | 192 : verschil 64 d: bit 6 Deze POKE blijkt echter niet bruikbaar voor MODE-omschakeling.

SETDEV

You can adjust the SIO or RS-232-interface at receipt or output of datas by the command SETDEV.

In order to adjust the PC-1600, for example, in data-remote-transmission program in that way that it can receive or send at any time the command will be used as follows:

```
SETDEV"COM1:"PO,KI
```

In case the command SETDEV is used together with the selected interface beforehand, but without any indication of parameter, the standard adjustments are reproduced. Thus, all data outputs are led to the parallel printer (CE-1600P) and inputs are expected from the keyboard.

EXAMPLE:

```
SETDEV"COM1:"
```

CONTROL CODES FOR EDITING

CTRL +	CODE	description
CTRL	A	insert ON/OFF
CTRL	D	clear all characters to the left (to beginning of program line)
CTRL	E	clear all following characters to the right (to line end of program)
CTRL	F	advance word for word to the right
CTRL	H	effects the same as [BS] -key. Clears character for character to the left.
CTRL	R	repeat function ON/OFF
CTRL	X	clears LCD; same effect as CL-key

INSERT

If you want to insert single letters or whole commands in PRO-mode proceed as folows:

Insert of Single Characters

SHIFT ▷

If you want to insert several characters you have to press the ▷ -key as long as you will have inserted a sufficient number of free spaces.

Continuous Insertion

Automatic insertion is switched on resp. off by CTRL A.
In case the cursor is blinking faster than normal, the INSERT-mode is switched on. Repeated pressing of CTRL A switches the INSERT-mode off again.
(Cursor is normal blinking fast.)

BASIC ROM VERSION

The PC-1600 was supplied with a new, subsequently improved BASIC-ROM.

If you would like to know which version can be found in your PC-1600, enter only the following commands:

```
PRINT PEEK # (0,&7FFF)
```

The value indicates whether it is the old version (130) or the new version (4) or (5).

	ROM 1	ROM 2	ROM 3
Command	PEEK #(0,&7FFF)	PEEK #(6,&BFFF)	PEEK #(3,&7FFF)
NEW	4/5	163	195
OLD	130	161	193

ROTATE

The ROTATE-command determines the position of the characters and the print direction which is to be performed with the plotter.

Thus, the command ROTATE 0 is writing the normal readable position.

ROTATE 1	lying at the right side downwards
ROTATE 2	turn upwards (rotating) from the right to the left
ROTATE 3	lying at the left side upwards

EXAMPLE:

```
10 GRAPH
20 GLCURSOR (200, 200)
30 FOR I = 0 TO 3
40 ROTATE I
50 LPRINT "ABC"
60 NEXT I: END
```

****

LAYOUT OF FUNCTION KEYS

6 function keys in 3 different stages are at you disposal for any layout. That means, you can arrange in total 18 keys due to your selection. We want to explain the way how to do that with the help of an example:

1. New layout of the keys

a) Press [SHIFT] [MODE] the word "RESERVE" appears above in the display.

b) Choose one of the 3 stages on which you want to arrange the keys. Press the [⇕]-key and take, for example, stage I (at the right, beside the word RESERVE I, II or III appears, if you press the [⇕]-key).

c) Press the key [!]
F1:_ appears
enter: LLIST↵ [ENTER]
press the key ["]
F2:_ appears
enter a SETCOM"COM1:",300,8,N,1↵

You can produce the quotation marks in the RESERVE-stage with the help of [SHIFT] ["].

The ↵-character states that the command is to be performed immediately.

2. Setting up of a menu

a) Press [SHIFT] ["]
b) Enter the following combination of letters:

ABC DEF GHI KLM NOP

c) Press [SHIFT] ["] [ENTER]
d) Press [MODE]
e) Press [CL]
The menu-line appears.

AUTORUN

If you want to have a program automatically loaded and started from floppy-disk or RAM-disk you have to proceed as follows:

1. Write a BASIC-program, e. g.

```
 5 WAIT     50
10 PRINT"THIS IS THE AUTOMATIC"
20 PRINT"START OF AN"
30 PRINT"AUTORUN.BAS STORED"
40 PRINT"PROGRAM"
```

2. Save the program as follows:

   SAVE"X:AUTORUN.BAS" <ENTER>
   Instead of X you can also use S1 or S2.

3. Switch the computer on RUN-mode.

4. Switch the computer off; as soon as you switch the computer on again, the program AUTORUN.BAS is automatically loaded and started.

CHARACTER SET

As everybody knows the PC-1600 is also mounted with the processor of the PC-1500. Thus, also special characters which have only been available on the PC-1500 up to now, can be represented on the PC-1600, but provided that there is a 32 KB RAM-module in slot 1.
Enter the following line:

```
POKE&C000,&3E,&1,&CD,&33,&1,&C9
```

By the command

```
CALL & C000
```

the additional 2 characters will be activated and can also be called as follows:

[SHIFT] [↑] = √‾
[SHIFT] [↓] = π

Further these are not only characters which appear on the LCD but perfect mathematical operators.

EXAMPLE:	Input			Result
	[SHIFT] [↑]	25	[ENTER]	5
	[SHIFT] [↓]	[ENTER]		3,141592654

LOC

The command LOC indicates the number of data sets of a specified file which have been read or written up to now. The command LOC can only be used at floppy-disk- and RAM-disk-files.

Attention:

The LOC-command reads 256 byte. That means, if your entries are, for example, only 20 byte long and you call the LOC-command after 10 entries, a 1 would be output, as the 256 bytes have not yet been exceeded. After 13 entries the LOC-command would register 2 entries. That means,

the LOC-command can only be successfully used when the data sets are exactly 256 byte.

STATUS

The STATUS-command is one of a few which is only working variously by the last number.

STATUS 0 indicates the number of free memory area incl. variable area, that means STATUS 0 and MEM are identical.

EXAMPLE:
```
STATUS 0    ENTER    10810
MEM         ENTER    10810
```

STATUS 1 indicates the size of a program loaded.

EXAMPLE:
```
STATUS 1    ENTER     2247   (value to be assumed states
                             layout of 2,247 KB)
```

STATUS 2 address from which the free user area starts.

STATUS 3 address with which the free user area ends.

So, the actual free memory can be called by STATUS 3 - STATUS 2.

DIM-COMMAND

The DIM-command can be used in a way which is somewhat obstinate. It is, for example, possible to call a variable in two different ways.
If you dimension, for example, the variable A$ as follows, you will get two possibilities to call the contents:

```
10 DIM A$ (5, 4)
20 FOR I = 0 TO 5
30 FOR J = 0 TO 4
40 A$(I,J)=CHR$(65+I+J)
50 N.J
60 N.I
70 PRINT A$(5,4), A$(29)
```

You will note that the variables are of the same contents.

ON ADIN GOSUB

The command ON ADIN GOSUB is of great interest for the electro-technicians or radio-/TV-technicians. You can, for example, use the analogous input for testing CD-players, as these players produce an analogous input signal.

The following example will show how the command ON ADIN GOSUB has to be used:

```
 10   ON ADIN (150, 160) GOSUB 100
 20   ADIN ON
 30   PRINT AIN;
 40   GOTO 30
100   BEEP 5, 100, 100
110   RETI
```

Branching will be effected as soon as the value of AIN can be found outside of the control stages indicated.

RESTORE

We want to show you a further possibility how to call pinpointed DATAS very fast and without having to read all previous ones with the help of a small example:

```
 10   INPUT"ARTICLE";A$
 20   RESTORE A$:READ PR,BS
 30   PRINT"ARTICLE PRICE STOCK"
 40   PRINT A$, PR, BS
 50   G. 10

100   "PC1600" DATA 500, 50
110   "MZ800"  DATA 500, 20
120   "PC7000" DATA 2000, 1000
```

No matter how many articles have been stored the access to the datas is always of the same speed. That means, neither waiting- nor reading time, as this routine is based on the internal machine stage.

SOFTWARE INFORMATION NO 1600-010E 9/9

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Since many users want to use the internal clock but who have difficulties with the instruction ON TIME$ GOSUB, we want to show how this routine has to be used with the help of an example:

```
 10  REM  SET DATE AND TIME
 20  HERE THE 24/3 AT 9 0' CLOCK 49 MINUTES AND 50 SECS
 30  TIME = 032409.4950
 40  REM INSTRUCTION AT WHICH TIME IT IS TO BE BRANCHED
 50  ON TIME$="03/24/09/50" GOSUB 100
 60  REM ACTIVATE TIME
 70  TIME$ ON
 80  REM HERE A TIME INDEPENDANT ROUTINE CAN BE
 90  CURSOR 2,2: PRINT TIME$:GOTO 90
100  REM HERE THE SUBROUTINE BEGINS
110  BEEP 5, 100, 100
120  REM JUMP BACK TO THE MAIN PROGRAM
130  RETI
```

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i. V. Helmut Burmeier

i. A. Detlef Korhon