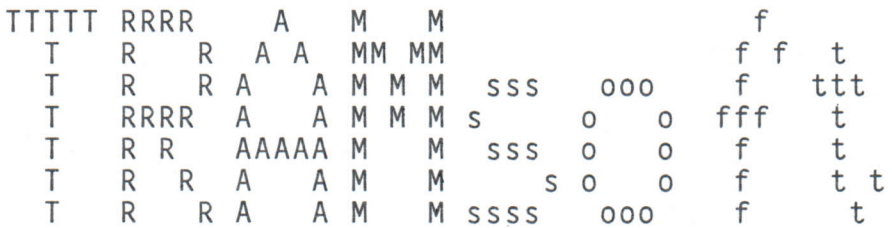

Ambühler & Müller

Parallel/Floppy-Interface

Users Guide

TRAMsoft Parallel/Floppy-Interface
****

Introduction

The TRAMsoft Parallel/Floppy-Interface can be used as
- 16 bit parallel-input/output interface (using port A & B)
- Interface to any printer with CENTRONICS-standard-interfcae (port B)
- Interface to up to 4 COMMODORE VC 1541 floppy-drives (port A)

It is possible to connect the printer and the floppy-drives at the same time.

*** Power Up - sequence ***

To prevent hardware distruction or data-loss, follow always this power up-sequence:
1) Make sure, that no peripheral-device is switched on
2) Switch on the SHARP PC-1500/PC-1500A
3) Switch on all peripheral-devices in any order

*** Power Off - sequence ***

For the same reason follow this power off - sequence:

1) Switch off all peripheral-devices in any order
2) Switch off the SHARP PC-1500/PC-1500A

Anti-Auto-Power-Off - Feature (AAPO)

If the SHARP PC-1500/PC-1500A is switched off by its auto-power-off-feature all its peripheral-devices MUST be switched off, before the PC-1500/A is switched on again. To prevent this uncomfortable situation, the TRAMsoft Parallel/Floppy-Interface has a anti-auto-power-off-feature which prevents the PC-1500/A to switch off by issuing interrupts. This feature is disabled after a CLOAD- or CSAVE-operation. To start it again, CALL &E107 must be performed. The following message NEW 0 ... or CHECK: .. can be ignored. POKE &79DA,0 disables the AAPO-feature.

PCON Port , Direction , Control-Signal-1 , Control-Signal-2

Controls the direction of the data-signals and the functions of the control-signals.

- Port: "A" or "B"
- Direction: "I" for input, "O" for output
- Control-Signal-1: "+","-","D" set flag if pulse pos., neg., disable flag
- Control-Signal-2: different use for port A and B

PFLAG Port

Represents the status of the control-signals (0 .. 3)

- Port: "A" or "B"

PGET (Port , Line) or PGET$ (Port , Line)

Represents the status of a certain line (0,1 or "L","H")

- Port: "A" or "B"
- Line: 0 .. 7

PREAD Port

Represents the status of the lines of one port or both ports together (0 .. 255 or 0 .. 65535).

- Port: "A" or "B" or "*"

PSET Port , Line , Value

Sets a certain line to the specified status.

- Port: "A" or "B"
- Line: 0 .. 7
- Value: 0 or 1

PWRITE Port , Value

Sets the line of one port or both ports together to the status specified by the value.

- Port: "A" or "B" or "*"
- Value: 0 .. 255 or 0 .. 65535

How to use the TRAMsoft Printer-Software
****

OPN Device-name

Specifies the device for LLIST and LPRINT commands (only necessary of more then one printer is connected, e.g. SHARP CE-150 and a printer via the TRAMsoft Parallel/Floppy-Interface).

- Device-name: "MGP" for CE-150, "PAR" for TRAMsoft Parallel/Floppy-Interf.

CONSOLE Length , Endcode-1 , Endcode-2 , Edge

Specifies the number of characters per line, the endcode and the edge of the printer-signal.

- Lenght: 16 .. 255, 0 for no endcode
- Endcode-1, Endcode-2: Characters to be sent to the printer at the end of the line; 0 for "Carriage Return" (&0D), 1 for "Line Feed" (&0A).
- Edge: 0 if the printer has a BUSY-signal, 1 if it has an ACKNOWLEDGE-signal. But always use pin 10 at the interface.

LLIST First line , Last line

Same function as LLIST of the CE-158 but always related to the "current module".

LPRINT Expression

Same function as CE-158.

PROGRAM Module-number or any label in the program-module

Sets the specified program-module as the "current module".

TAB / ZONE

Same function as CE-158.

How to use the TRAMsoft Floppy-Standard-Software
****

DCHAIN Program-name , Start

Loads a program from the floppy into memory and starts execution (same as the CHAIN operation of the CE-150).

DCMD Floppy-Command , Drive-number

Performs execution of a floppy-command (see VC 1541 manual)

- Floppy-Command: NEW, INITIALIZE, VALIDATE, COPY, RENAME, SCRATCH
- Drive-number: 8 .. 11 (default is 8)

DEFDISK Drive-number

Sets the specified floppy-drive to the default drive (drive-number 8). Applicable only if more then one floppy-drives are connected.

- Drive-number: 8 .. 10 (11 is used to swap the drive-numbers)

DFRE Drive-number

Represents the number of free blocks.

- Driver-number: 8 .. 11

DIR Drive-number

Lists the files on the disk. If there is no program in memory, the full directory is stored as a program in memory otherwise each entry is listed in the display. ENTER proceeds to the next entry (ENTER with autorepeat).

- Drive-number: 8 .. 11 (default 8)

DIR$ Entry-number

Represents the specified entry of the directory as a character string.

- Entry-number: 0 .. number of files plus 1

DLOAD / DLOAD I / DLOAD M / DLOAD P / DLOAD V

Performs LOAD operation.

- DLOAD: Same as CLOAD of the CE-150.
- DLOAD I: Same as CLOAD M of the CE-150, but for memory-bank with PV=1.
- DLOAD M: Same as CLOAD M of the CE-150.
- DLOAD P: Same as MERGE of the CE-150.
- DLOAD V: Same as INPUT # of the CE-150.

DSAVE / DSAVE I / DSAVE M / DSAVE P / DSAVE V

Performs SAVE operation.

- DSAVE: Same as CSAVE of the CE-150.
- DSAVE I: Same as CSAVE M of the CE-150, but for memory-bank with PV=1.
- DSAVE M: Same as CSAVE M of the CE-150.
- DSAVE P: Saves only the "current module", no equivalent instruction with the CE-150.
- DSAVE V: Same as PRINT # of the CE-150.

DSTAT$ Drive-number

Represents the status of the specified floppy-drive as a string.

- Drive-number: 8 .. 11

DVERIFY / DVERIFY I / DVERIFY M / DVERIFY P / DVERIFY V

Compares data on disk with data in memory (same syntax as DLOAD).

BACKUP Drive-number-1 TO Drive-number-2

Copies the contents of the disk in drive-1 to drive-2 (duration ca. 28 min.)

- Drive-number-1, Drive-number-2: 8 .. 11

CLOSE Log. File-number

Closes an opened channel.

- Log. File-number: 0 .. 9

DRECPOS Log. File-number , Record-number , Byte-number

Sets the read/write-pointer to the specified byte in the specified record of a relative file.

- Log. File-number: 0 .. 9
- Record-number: 1 .. 65535
- Byte-number: 1 .. 254

DSHOW$ Log. File-number

Represents the contents of an OPEN-variable.

- Log. File-number: 0 .. 9

INPUT # - Device-number , Log. File-number , Variables-list

Loads data from disk into variables.

- Device-number: 15 for floppy-interface
- Log. File-number: 0 .. 9
- Variables-list: Variables where data is to be load into.

OPEN Log. File-number , Primary-adr. , Secundary-adr. , File-descriptor

Opens a channel.

- Log. File-number: 0 .. 9
- Primary-address: Drive-number 8 .. 11
- Secundary-address: Channel-number 2 .. 14 , 15 for commands
- File-descriptor: For sequential files: Filename,Filetype,Filemode
  For relative files: Filename,Filetype,Recordlength
  - Filename: up to 16 characters
  - Filetype: - "L" for relative files
    - "P" for program-files
    - "S" for sequential files
    - "U" for user-files
  - Filemode: - "A" append, add data at the end of the file
    - "R" open for read
    - "W" open for write
  - Recordlength: Number of bytes per record.

See also manual of the VC 1541.

PRINT # - Device-number , Log. File-number , Variables-list

Writes data from variables to the floppy.

- Device-number: 15 for floppy-interface
- Log. File-number: 0 .. 9
- Variables-list: List of variables or expressions

The OPEN-variable

The OPEN-variable contains all information about an opened channel. Each OPEN-instruction creats an OPEN-variable (mayby even if an ERROR occurs). A CLOSE command delets the appartaining OPEN-variable.
OPEN-variables have the name o0 .. o9 and cannot be accessed from BASIC, except with DSHOW$. Never use NEW 0 or CLEAR while files are opened, if a files is not orderly closed, data might be lost !

Contents of an OPEN-variable: pp,ss,nnnnnnnnnnnnnnn,t,m,lll

Where: p: Primary-address (2 characters)
s: Secundary-address (2 characters)
n: Filename (16 characters)
t: Filetype (1 characters)
m: Filemode (1 characters)
l: Recordlength (3 characters)

Example with a sequential file
****

a) Open a new sequential file

```
OPEN 2,8,5,"Test1.DAT,S,W"
```

If the OPEN is successfull, the red LED will stay switched on.

b) Print the OPEN-variable

```
PRINT DSHOW$ 2
" 8, 5,Test1.DAT       ,S,W  0"
```

c) Write data to Test1.DAT

```
T$="SHARP PC-1500":DIM N(5):N(3)=1/7
PRINT #-15,2,"TRAMsoft",12345,T$,N(3)
```

d) Close the file Test1.DAT

```
CLOSE 2
```

The data temporary stored in the memory of the floppy is now written to the disk and the red LED is turned off.

e) Open the file Test1.DAT for read

```
OPEN 0,8,12,"Test1.DAT,S,R"
```

The red LED is switched on again.

f) Read data from the file Test1.DAT into variables

```
INPUT #-15,0,A$,B$,C$,D$   or
INPUT #-15,0,A,B,C,D
```

On disk, data is stored as a string, so it can be read always into string variables. If data is read into num. variables, a VAL operation is performed. If there is no translation into numerical value possible, the result is zero. There will never an ERROR occure.

Example with a relative file
****

a) Open a new relative file

```
OPEN 9,8,10,"Test2.DAT,L,80"
```

If the OPEN is successfull, the red LED will stay switched on.

b) Print the OPEN-variable

```
PRINT DSHOW$ 9
" 8,10,Test2.DAT       ,L, , 80"
```

c) Write data into record 20 of the file Test2.DAT

```
VN$="Peter", NA$="Sample", ST$="Longstreet", PZ$="1234"
OT$="Ruemlang", TN$="123.45.67"

DRECPOS 9,20,1 :PRINT #-15,9,VN$
DRECPOS 9,20,16:PRINT #-15,9,NA$
DRECPOS 9,20,30:PRINT #-15,9,ST$
DRECPOS 9,20,50:PRINT #-15,9,PZ$
DRECPOS 9,20,55:PRINT #-15,9,OT$
DRECPOS 9,20,70:PRINT #-15,9,TN$
```

d) Read the just saved data into the variables A$ .. F$

```
DRECPOS 9,20,1 :INPUT #-15,9,A$
DRECPOS 9,20,16:INPUT #-15,9,B$
DRECPOS 9,20,30:INPUT #-15,9,C$
DRECPOS 9,20,50:INPUT #-15,9,D$
DRECPOS 9,20,55:INPUT #-15,9,E$
DRECPOS 9,20,70:INPUT #-15,9,F$
```

e) Close the file Test2.DAT

```
CLOSE 9
```

The data will now be stored on disk and the red LED turns off.