SFD 800 - MFD 800

5 1/4 Inch Floppystation 320 KB
and
3.5 Inch Floppystation 180 KB
for the
SHARP MZ 800

Bedienungsanleitung
Owner's Manual

Dear Purchaser,

congratulation on your purchasing the Kersten & Partner 5.25" Single - Floppy - Disk SFD 800.

This manual is intended to help you understand the 5.25" Floppy SFD 800 form Kersten & Partner.

We assume that you already have some experience in programming in BASIC.

So we have only described the syntax and its limits. Only differences from SHARP - Cassette - Basic and new commands are explained.

This manual should not be regarded as a "book of recepies". Every programmer should try to find out by himself what he can do with this BASIC - interpreter and so gather the experience to use this interpreter most efficiently.

Daun, January 1985

sds computer Service

Rainer Schäfer

in order of K & P

The programmes have been checked carefully. We cannot,
however,   accept any responcibility should there still be
any errors left in the programmes, in the text or in the
examples.

The programmes are subject to modification, addition or
deletion without prior notice for future versions.

Manual and programmes are sold subject to the condition
that they shall not, by way of trade or otherwise, be lent,
re-sold, hired out, stored in any system or otherwise circu-
lated without the publisher's prior consent.

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The K & P - Floppy
===================

   The storage - capacity of one disk is 320 K - Byte with
this BASIC - Interpreter. 12 K - Bytes, however, are re-
quired for the disk - management by the interpreter itself.

   Up to four disk - drives can be connected at the same
time. But it is also possible to copy disks with only one
disk-drive. The use of the built - in cassette - recorder
will not be affected.

   Connecting the floppy
   =====================

   To connect the 5.25" - floppy you only need a screw
- driver.

                    W A R N I N G
                    =============

   Unplug all devices before you start working on
them!!!

   When connecting the floppy - disk - interface -
card pay attention to the instructions in the SHARP -
Basic - Manual ("Connecting optional I/O - Interface -
cards"). Connect the data - cable of the disk - drive
with the controller - interface. The data - cable -
plug can be plugged in easily if it is in the right
position. Replace the original - slot - cover. Now you
can connect all devices to the mains.

   Instructions for use
   ====================

   Switch on the floppy first, then your computer. If
you want to end work: switch off computer first, then
the floppy. Note: no disk should be in the drive when
switching on or switching off because this could cause
the damage of stored data.

   Insert the disk with the head - load - sector in
front into to drive and close the drive by using the
Push - buttom. To take out the disk, push the Push -

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button. Do not remove out the disk while the control -
lamp is on.

    You can protect the disk against writing on it
unintentially. Take a write-protection-label and use
it to cover the write-protection-notch. You can only
write on the disk if the write-protection-notch is
open.

    Only disks which are formated for your computer can
be used. Format new disks with the utility "UTILITY"
(Point I). You can also erase all data stored on a disk
in that way.

How to make a copy of the master - disk
==_====================================

    It is advisable not to use the original master -
disk, but to work with a copy.

How to make a copy:

1.)   Switch on devices

2.)   Insert master - disk

3.)   Boot the interpreter by pressing F (IPL). Now the
       interpreter will be loaded.

4.)   After the Interpreter Ready - notice type in
       RUN "UTILITY" to start the copy - programme.

5.)   Take out master-disk and insert a empty disk.

6.)   Start formating by pressing I. The disk will now
       be formated and verified.

7.)   Start copying the disk by pressing C. The pro-
       gramme will advice you to insert "SOURCE - DISK"
       (Master) or "DESTINATION - DISK" (Slave). The
       disk will be copied after having changed 10
       times.

    Now you can use the copy instead of the original
master-disk.

The disk BASIC - Interpreter
==============================

Differences to Cassette - BASIC
==============================

   The 5.25" - disk - BASIC - interpreter is mainly a super-
set implementation of SHARP Basic 1Z-013A (MZ-700), 1Z-008
(MZ-700) 1Z-016 (MZ-800),2Z-046 and 1Z-009 (MZ-800). Pro-
grammes written under these BASIC - versions will run, if
they only use commands described by SHARP, with little or no
changes. But note the following differences:

   1.)   As the disk-Basic-interpreter needs more space
         than   cassette-based-BASIC-interpreters,   only
         about 20 K - bytes are free·to be used.

   2.)   All files on disk must be named (File-name).

   3.)   Floppy - basic is loaded by IPL by pressing the F
         instead of C .

   4.)   Disk - basic supports the following new devices:

         FD1:   the first disk - drive   (SFD-800)
         FD2:   the extension disk - drive (SFD800-1)
         FD3:
         FD4:

   5.)   The number of simultaneously opened files is
         limited only by main - RAM - capacity. Sequen-
         tial- and RANDOM - files may be opened at the
         same time.

Standard Commands
=================

   Commands are described in uniform syntax manner.   Note
that only new floppy - commands are described.

   Format: Shows the correct syntax of the command.   Parts
              included in < > are optional.

   Function: describes the functions of the command.

   Note: may describe special effects.

   Example: shows an example.

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LOCK - Protecting of Files
============================

Format: LOCK "<device:>filename"

            device may be FD1:, FD2:, FD3: or FD4:

Function: The file specified by filename will be protected
            against changing or erasing.

            Device specifies the drive which the file is
            stored on.

            Protected files are marked in the directory (DIR)
            by an asterisk.

Note: The protection by locking a file is only control-
            led by software - function of the disk - Basic -
            interpreter. The protection by fixing a write-
            protect-label is controlled by the drive - hard-
            ware but does not allow the protection of single
            files.

Example: LOCK "EXAMPLE"
            LOCK "FD1: EXAMPLE"

UNLOCK - Removing the File - Protection
==

Format: UNLOCK "<device:>filename"

            device may be FD1:, FD2:, FD3: or FD4:

Function: The protection set by LOCK will be canceled.

            The file specified by filename may be changed or
            erased after the command.

            The declaration of device and filename is the
            same as for the LOCK - command.

Note: LOCK and UNLOCK may be used with all types of
            files.

Example: UNLOCK   "EXAMPLE"
            UNLOCK   "FD1: EXAMPLE"

Commands for Programme - Files
===============================

SWAP - Programmes as Subroutines
================================

Format: SWAP "<device:>filename"

            device: see LOCK

Function: The BASIC-Programm in main-memory is stored on
            the default disk and the BASIC-file specified by
            filename is loaded and executed. Variables are
            not erased. Their values are passed over to the
            loaded programm.

            After execution of the programm the previously
            saved programm will be reloaded and execution
            will be continued after the SWAP - statement.

Note: The SWAP - statement operates like the GOSUB -
            command. It ist not possible to use this state-
            ment in a programme loaded with SWAP. There must
            be enough space to save the main programm on the
            default disk.

EXAMPLE: SWAP "SUBPR"

Commands for RANDOM - Files
===========================

    RANDOM - files differ from sequentiel files in the acces
- mode.

    It is possible to store data in a RANDOM - file and read
data from the same file without closing and reopening the
file. This is because records in RANDOM - files always have
the same length (32 bytes on MZ-800). Storing more than 32
bytes in a record is only possible by using two or more
physical records as one logical record. RANDOM - files can
be extended.

    The capacity of a RANDOM - file is only limited by disk -
storage - capacity.

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XOPEN - Opening a RANDOM - File
=================================

Format: XOPEN #l <,> "<device:>filename"

            l is logical unit number   (1 to 127)

            device: FD1: to FD4:

Function: The file specified by filename is opened for
            RANDOM - accessing. If the file does not exist,
            it will be created.

Note: The same file may not be opened twice at the same
            time. It has first to be closed.

Example: XOPEN #1, "FD1: RANDOM-DATA"

CLOSE - Closing a RANDOM - File
=================================

Format: CLOSE <#l>

            l is logical unit number   (1 to 127)

Function: The file opened under logical unit number l is
            closed.   If l is omitted, all opened files
            (sequentiel files and files on devices other than
            floppy too) are closed.

Note: To be sure that all data written to a file are
            stored on the disk, files have to be closed. Not
            closing opened files may result in losing data.

Example: CLOSE
            CLOSE #1

PRINT - Writing Data to a RANDOM - File
===

Format: PRINT #1 (r), d1 <,d2, ... , dn>

            l is logical unit number
            r is record number of the first record
            d is data to be written

Function: Data in the argument - list following the PRINT -
            command are calculated and stored in the file
            specified by logical unit number 1.   The first
            data is written to record r,   the second data to
            record r + 1 and so on.

            Data shorter than 32 bytes are complemented by
            spaces.   Data longer than 32 bytes are cut off
            after byte 32.

Note: The smallest record number is 1.

            Storing more than 32 bytes to one logical record
            can be done by deviding data with LEFT,   MID and
            RIGHT to several physical records.

Example: PRINT #1 (R*2-1), LEFT$(A$,32), MID$(A$,33,32)

INPUT - Read Data from a RANDOM - File
==

Format: INPUT #1 (r), v1 <, v2, ... , vn>

            l is logical unit number
            n is record number
            vn is name of variable

Function: Data stored in the file opened by logical number
            l are read from record r on and stored to the
            specified variable(s).

Note: Reading data from records with record-number
            greater than the greatest written record or un-
            written records will result in numeric value 0 or
            string value SPACE$(32).

            Reading past end of file can be detected by the
            EOF - function.

EXAMPLE: INPUT #1 (R*2-1), A$, B$

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EOF - Detecting the End - Of - File
====================================

Format: IF EOF(#1) THEN line or command

             1 is logical unit number
             line is line - number or label

Function: The EOF - function will show a true result if the
             record - number of the record last read is
             greater than the greatest written record - num-
             ber.

Example: Accessing a RANDOM - file

             100   XOPEN #1 , "FD1:DATA"
             110   PRINT " 1 --> Read
             120   PRINT " 2 --> Write
             130   PRINT " 9 --> End of programme
             140   INPUT "Number ? "; N
             150   ON K GOTO 200 , 400
             160   CLOSE #1 : END
             200   REM Read data
             210   GOSUB 2000
             220   INPUT #1 (2*R-1), N$, A$
             230   PRINT "Name   : "; N$
             240   PRINT "Address : "; A$
             250   PRINT : GOTO 110
             400   REM Write data
             410   GOSUB 2000
             420   INPUT "Name   : "; N$
             430   INPUT "Address : "; A$
             440   PRINT #1 (R*2-1), N$, A$
             450   PRINT : GOTO 110
             2000 PRINT : PRINT
             2010 INPUT "Address - Number ? "; R
             2020 IF R < 1 THEN 2010
             2030 IF R > 5000 THEN 2010
             2040 RETURN

Table of Error - Numbers
=========================

```
  1     Syntax error
  2     Overflow error
  3     Illegal data error
  4     Type mismatch error
  5     String length error
  6     Memory capacity error
  7     Array def. error
  8     Linelength error

 10     GOSUB nesting error
 11     FOR-NEXT error
 12     DEF FN nesting error
 13     NEXT error
 14     RETURN error
 15     Un def. function error
 16     Un def. line error
 17     Cant't CONT error
 18     Memory Protection error
 19     Instruction error

 20     Can't RESUME error
 21     RESUME error
 22     PAL error
 24     READ error
 25     SWAP level error
 27     System id error
 29     Framing error

 30     Overrun error
 31     Parity error

 40     File not found error
 41     Hardware error
 42     Already exist error
 43     Already open error
 44     Not open error
 46     Write Protect error

 50     Not ready error
 51     Too many file error
 52     Disk mismatch error
 53     No file space error
 54     Unformat error
 55     Too long file error
 58     Dev. name error
 59     Can't execute error

 60     Illegal Filename error
 61     Illegal Filemode error
 63     Out of file error
 64     Logical Number error
 65     LPT: Not ready error
 67     Dev. mode error
 69     Unprintable error
 70     Check sum error
```

Utilities
=========

    Utilities are stored on the master - disk. Type RUN and
the filename to start them.

UTILITY - Formating and Copying a Disk
======================================

    Starting this programme the following is displayed:

                    DISKETTE INITIALIZE   ---> I
                    DISKETTE COPY   ---> C
                    RETURN TO MONITOR   ---> M

    I   You have to format disk before you can use them
            on the MZ-800.

            After typing I and the number of the drive, disk
            will be formated and verified. If you use already
            formated disks, all data stored on the disk are
            erased, also files which are write-protected by
            LOCK - command.

            Disks are formated with 2 * 40 tracks / 16 sec-
            tors per track / 256 bytes per sector.

    C   You need this part of the programme to copy the
            disk.   After typing C the programme demands for
            SOURCE - DRIVE - number and DESTINATION - DRIVE -
            number.   If you copy on a single drive the pro-
            gramme invites you serveral time to change SOURCE
            - disk and DESTINATION - disk.

    M   The MZ-800 built-in IPL - Monitor is started.

FILING <-- CMT   - Reading Data from Cassette
==

    This utility will transfer BASIC - typed - files and
machine - typed - file from cassette to disk.   Insert   the
cassette in the tape - recorder and a disk in the drive.
After typing the drive - number the file will be transfered
from cassette to the disk.

    Typing M will return to the built-in IPL - Monitor.

$VERSN - Testing the Version of Programme - Disk
==

   The Disk - Basic and this manual has been carefully
prepared and checked for completeness and acuracy.   However,
in the event that you should notice any errors, please feel
free to contact your dealer or us by communicating the
version number of the Basic and a detailed explaination of
your problem.

   The version - number and the date of linking is stored on
the master - disk. $VERSN will display these dates on the
screen.

   After running this programme you have to push the reset -
button to reload the BASIC - interpreter.

How to handle disks
===================

   A disk is a very delicate storage medium. It should be
handled with care. Obey the following instrictions:

   1)   Never touch exposed areas of magnetic disk

   2)   Do not fold - do not bend

   3)   Keep away from magnetic fields

   4)   Isert carefully

   5)   Return to envelope after use

   6)   Dont switch on or off disk - drive when disk
          inserted.

in order of K & P

Commands and supported devices
=================================

File I/O commands and statements cannot be used for all file
devices. The table below shows restriction on use of them.

Device	CMT:	CRT:	RAM:	LPT:	KB:	RSx:	FDx:	USR:	QD:
Command/ Statement									
INIT	o	o	o	o	X	o	o	X	o
DEFAULT	o	o	o	o	o	o	o	o	o
DIR	X	X	o	X	X	X	o	X	o
LOAD	o	o	o	X	o	o	o	o	o
SAVE	o	o	o	o	X	o	o	o	o
DELETE	X	X	o	X	X	X	o	X	X
RENAME	X	X	o	X	X	X	o	X	X
CHAIN	X	X	o	X	X	X	o	X	o
MERGE	X	X	o	X	X	X	o	X	o
SWAP	X	X	X	X	X	X	o	X	X
ROPEN	o	X	o	X	o	o	o	o	o
WOPEN	o	o	o	o	X	o	o	o	o
XOPEN	X	X	X	X	X	X	o	X	X
PRINT	o	o	o	o	X	o	o	o	o
INPUT	o	o	o	X	o	o	o	o	o
CLOSE	o	o	o	o	o	o	o	o	o
KILL	o	o	o	o	o	o	o	o	o
LOCK	X	X	X	X	X	X	o	X	X
UNLOCK	X	X	X	X	X	X	o	X	X

o: Can be used
x: Cannot be used

    Further,   for CMT:, RS1:, RS2:, CRT:, LPT:, RAM:, QD: and
KB:, only one file can be opened at a time.