DSKPRO INSTRUCTIONS MANUAL
Version 1.1, August 2024

Welcome to DSK-PRO!

The latest version is **17.9** and this manual is based on this version.
We are proud to bring you the most powerful disk copy, disk analyzer, disk formatter and disk imaging tool ever made for the MSX and possibly the fastest disk copy tool on every platform!

This manual is intended for you to get the most of it and we believe that you will be astonished about how powerful this tool can be.

It is recommended to print this manual for quick reference too, so you can consult it anytime on-the-fly about the best way to copy locked or unlocked disks.

We hope you enjoy it!

THE TOOL

The new DSKPRO 17.9 is the best tool to create image disk files from physical disks, supporting all memory expansions in any slot/subslot, and supports direct physical access to the floppy disk controller. So, it is able to read disks with CRC errors to create DSK files without a problem.

It supports unprotected and protected disks being able to manage DSK and the new PDI files.

This tool has also a full disk zapper to allow you to edit the disk sectors in HEXA or ASCII. And you can search for a string through all the disk.

There is a option that shows the complete Track Information. All copy protections can be revealed. And it possible to see the FDC's Addresses or Ports.

You can also format disks fisically with this tool. Forget the messages from the DOS like "DISK ERROR" after a format command. It has advanced routines to go deep into the track sectors to format your disks. And you can activate the Verify Disk Option to increase the chances to get a well formatted disk.

Your PC doesn't format your MSX disk? Well, PC sucks. Formatting a disk was never so easy.

And at last but not least it is a full disk copier.
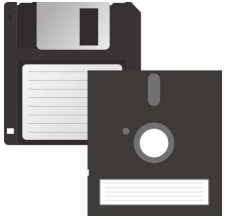

MAIN SCREEN

The main menu is divided in two sections called "OPTIONS" and "INFORMATION".

On the "OPTIONS" section, you can configure every item of the desired DSKPRO actions, by using the [UP] and [DOWN] cursor keys to select them or [RIGHT] and [LEFT] to change the values of these items.

After it is properly configured, you can engage the desired automated process by pressing the [ENTER] key.

The options you need to set are:

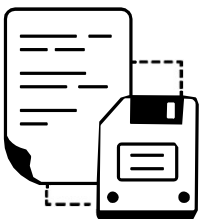- **FORMAT:** Use this option to set the format of your disk.

For example, If your disk was formatted as Double Sided with 40 tracks, set it to "40T - DOUBLE". If your disk was formatted as Single Sided with 80 tracks, set it to "80T - Single" .

The possibilities are:

Automatic (Default)
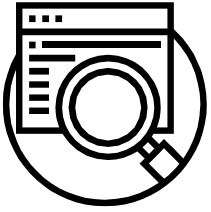80T - Double
80T - Single
40T- Double
40T - Single

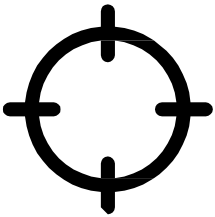- **OPERATION:** Use this option to select the type of process you want.

The possibilities are:

DISK > DISK
DISK > FILE
FILE > DISK

- **SOURCE DRIVE:** The drive that contains the disk image file, or the physical disk to copy from.

- **TARGET DRIVE:** The drive that will contain the disk image file, or the physical disk to copy to.

- **ACCESS TYPE:** That is the way that DSKPRO uses to access the disk drive.

The possibilities are:

BIOS (floppy disk interface ROM). (*Not necessary anymore as DSKPRO works with all disk interfaces*)

Direct FDC* chip access: Used to go deep into your disk allowing the copy of protected disks.

*Tip: FDC means Floppy Disk Controller.

(There is a list of supported FDCs on the technical specifications at the end of this manual. DSKPRO supports all Floppy Disk Controllers.

- **COPY MODE:** It is the type of copy you want to do. It

The possibilities are:

Normal - the fastest possible floppy disk copy on ANY 8-bit computer EVER!!! (And possibly on any platform too.). It is used to copy unprotected disks.

Protected* - very slow, but attempts to copy disks with the most known copy protection mechanisms. It is used to copy protected disks.

*Tips: There are 2 ways to use the Protected mode. The default is with hard mode on, because it does a very deep analysis of each track in raw data. If the track is somewhat demagnetized in the formatting datastream, there can be a possibility of this demagnetization to be interpreted as a copy protection and the copy can have it corrected on an unexpected way. If it occurs, you can use the hard mode off by pressing [M] before start.

- **FILENAME** - You can edit the virtual disk image file name by pressing [N].

The extension of this file name is according to the selected copy mode as follows:

".DSK" - Virtual disk image compatible with most MSX emulators out there.
".PDI" - DSKPRO "Protected Disk Image" file.

Remember that your can press "L" to select the image file to be read (from any drive or directory) or "S" to set the drive and directory where the image file will be written.

These file operations (DISK > FILE or FILE > DISK) works only with DOS2 or Nextor.

On the INFORMATION section, you can have "on-the-fly" information about the progress of selected action

On this screen as well as other screens along the program, you can get a quick HELP screen just by pressing [H].

*Tip: These HELP screens are not complete, due to MSX main memory limitations, but you can print this manual and have all the information that you need.

On the MAIN SCREEN, the list of possible key-engagement features are the following:

```
    [1]      CHANGE FOREGROUND COLOR
    [2]      CHANGE BACKGROUND COLOR
    [T]      TRACK INFORMATION
    [Z]      DISK ZAPPER
    [F]      FORMAT DESTINATION DISK
    [V]      VERIFY DISK (ON-OFF)
    [D]      DISABLE MEMORY EXPANSIONS
    [P]      FORCE MEMORY MAPPER
    [G]      FORCE MEGARAM
    [I]      CHANGE INTERLEAVE
    [E]      EXTRA TRACKS (ON-OFF)
    [M]      HARD MODE (ON-OFF)
    [X]      DOUBLE STEP (ON-OFF)
    [U]      SET TURBO (ON-OFF)
    [N]      DEFINE FILE NAME
    [L]      LOAD FILE
    [S]      SET TARGET PATH
 [SPACE]     FDC DETAILS
   [ESC]     ABORT-QUIT PROCESS
 [RETURN]    START PROCESS
```

1   Change text foreground color

2   Change screen background color

[T] Engage DSKPRO internal track information debugger.

[Z] Engage DSKPRO internal disk zapper/editor.

[F] Format floppy disk on the current selected target (destination) logical drive.

[V] Toggle the disk write verification. (Default value = off.)

[D] Disable all memory expansions and uses just the 64k of normal RAM.

It requires lots of disk swaps if you are copying one disk to another with just one disk drive. But it´s the safest mode if your memory expansion are not working properly.

*Tip: DSKPRO is designed to automatically detects the bigger memory expansion (Memory Mapper or MegaRAM) that you have on your MSX.

[P] Force the use of the Memory Mapper.

It will automatically select the biggest memory mapper connected to your MSX.

[G] Force the use of the Megaram.

It will automatically select the biggest megaram connected to your MSX.

[I] Opens a pop-up window to select the format interleave,

That can be [1]:1, [2]:1, [3]:1, [4]:1 or [5]:1. (Default value = 1).

[E] Toggle 2 extra tracks.

that can be useful to copy some protected disks (Default value = off). But if you copying a protected disk (360K 40 Tracks), it automatically adds 2 extra tracks to copy until track 41.

[M] Toggle ON/OFF Hard Mode.

When Hard Mode is ON, it copies more protections but it is a little bit slower. When it can not decode one track using Hard Mode ON, it automatically goes to Hard Mode OFF.

[X] Toggle ON/OFF Double Step.

When Double Step is ON, it will appear [DS] on your screen.
This function can be used JUST if you have a 720k disk drive, otherwise there is no point of doing that.
When Double Step is ON, you can read or write a 360k 40T disk in a 720k Disk Drive. Normally useful for users with just 720k 5 1/4 disk drives that want to read old 360k 5 1/4 disks.
For example, you can read a 360k 5 1/4 floppy disk with your 720k 5 1/4 disk drive and create a DSK or PDI image file. And vice versa. You can read a DSK or PDI image file and create a working 360K 5 1/4 floppy disk with your 720k 5 1/4 disk drive. After this, the disk can be read JUST in a 360k 5 1/4 disk drive.

[U] Toggle ON/OFF Turbo Mode.

When Turbo Mode is ON, it will appear [TURBO] on your screen. Be Careful. JUST set this option ON if you have a Philips NMS 8250 or NMS 8280 MSX computer. If that is your case, the speed will be insane. Of course it is just for Normal Copy Mode (unprotected disks

[N] Define the image file name.

Remember that if you do not press "L" to select the image file you want from the IDE drive, or "S" to set the target PATH where the image file will be written, in a DISK → FILE or FILE → DISK operation, it will be loaded or saved in the same directory DSKPRO.COM is located.

[L] It opens a beautiful interface to select the image file to be read.

It shows all .DSK and .PDI files. You can go into all Drives and Directories. Used in a FILE -> DISK operation.

[S] It is used to set the path where the image file will be written.

Used in a DISK -> FILE operation.

[ENTER] Starts the copy process. Disk to Disk, File to Disk or Disk to File.

[SPACE] To get FDC details.

You need to select the drive you want the details in the Source Drive.

[ESC] to abort any DSKPRO process.

DISK ZAPPER

ZAPPER EDIT mode

DSKPRO features an internal simple but powerful disk zapper (so you don't need another program to view or edit bytes directly on your disk).

The main functions of it are:

[D] to select drive where the disk you want to view or edit is.

[F] to find a string (of maximum of 12 characters) inside the disk.

[E] to enter on ZAPPER EDIT mode of the selected sector of the disk.

When in edit mode, you can press:

[TAB] to toggle between ASCII edit and HEX edit.

[ENTER] to save what you edited.

[ESC] to just exit from the edit mode without saving the changes.

TRACK INFORMATION

TRACK MAP

DSKPRO have an internal disk analysis tool that shows a lot of details about the tracks like:

TR – Track Number
SD – Side Number
ST – Sector Number
SS – Sector Size
C1 – CRC1
C2 – CRC2
CD – CRC Error in Data Field
CI – CRC Error in Header
DD – Deleted DAM

You can navigate by the information by pressing:

[**RIGHT**] or [**LEFT**] cursor keys to respectivelly increment or decrement track number.

[**0**] or [**1**] to switch between side 0 or 1 of the disk.

[**T**] to set the track that you want to check information.

[**M**] to engage the TRACK MAP mode that is a little similar to the disk zapper, but this shows physical track raw values instead of the logical sectors.

On this Track Map mode you can:

[**RIGHT**] or [**LEFT**] cursor keys to respectivelly increment or decrement track number.

[**UP**] or [**DOWN**] cursor keys to scroll data up or down.

[**0**] or [**1**] to switch between side 0 or 1 of the disk.

Easy Steps to use DSKPRO

- Copy DISK to DISK:

Set "OPERATION" option to "DISK → DISK".
Set the "SOURCE DRIVE" option to the drive you want to be the source. In this example it is "B" and drive "A" is the IDE.
Set the "DESTINATION DRIVE" option to the drive you want to be the target. In this example it is "C".
Set the "COPY MODE" option to "NORMAL" if you are copying an unprotected disk, or to "PROTECTED" if you are copying a protected disk. In this example it is "NORMAL".
And press "ENTER" to start the process.

As you can see in these images below:

- Copy FILE to DISK:

Set "OPERATION" option to "FILE→ DISK".
Set the "SOURCE DRIVE" option to the IDE drive. It´s normally drive "A".
Set the "DESTINATION DRIVE" option to the drive you want to be the target. In this example it is "B".
Set the "COPY MODE" option to "NORMAL" if you want to load a DSK image, or "PROTECTED" if you want to load a PDI image. In this example it is "NORMAL".
Press "L" to choose the image file from the IDE.
And press "ENTER" to start the process.

As you can see in these images below:

- Copy DISK to FILE:

Set "OPERATION" option to "DISK→ FILE".

Set the "SOURCE DRIVE" option to the drive you want to be the source. In this example it is "B".

Set the "DESTINATION DRIVE" option to the IDE drive. It´s normally drive "A".

Set the "COPY MODE" option to "NORMAL" if you are creating a image file from an unprotected disk, or to "PROTECTED" if you are creating a image file from a protected disk. In this example it is "NORMAL".

Press "N" to define the name of the image file

Press "S" to choose the target PATH where you want to save the image file. After you are in the correct place, select "SET PATH".

And press "ENTER" to start the process.

As you can see in these images below:

APPENDIX 1 - List of supported FDCs (floppy drive controller chipets)

Fujitsu MB8876A, MB8877A
(Appears as "NATIONAL" on DSKPRO.)
Example interfaces: TechnoAhead Leopard, DDX 2.0, DDX2.1, Tradeco, etc. Basically the brazilian Gradiente Expert DDPLUS and all National MSX computers with built-in disk drive.

Western Digital WD2793 - port access only
(Appears as "MICROSOL" on DSKPRO.)
Example interfaces: Microsol CDX-2, DDX 1.2, DDX 3.0x

Toshiba TC8566AF
(Appears as "PANASONIC" on DSKPRO.)
Example interfaces: Built-in disk interface inside: Panasonic FS-A1ST, Sanyo PHC-70FD, etc. Basically all Panasonic and Sanyo MSX computers with built-in disk drive.

Western Digital WD2793 - memory access only
(Appears as "PHILIPS" on DSKPRO.)
Example interfaces: Built-in disk interface inside: Sony HB-F1XV, Philips NMS 8250, etc. Basically all Sony and Philips MSX computers with built-in disk drive.

Western Digital WD37C65B
(Appears as "TALENT on DSKPRO.)
Example interfaces: Talent TDC-600 and brazilian DDX-R.

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