

SAMCONV.xls – Version 2.51 - USER MANUAL for CP/M-Formats

What is SAMCONV?

SAMCONV.xls Version 2.xx is a tool for converting CP/M (Vers. 2.2 and compatibles, e.g. TurboDOS) disk image files (.DSK) of **diverse computers** saved by the program SAMdisk or FLUXCOPY. This DSK file is an “EXTENDED CPC DSK” format, has binary data with extra informations for track, sectors, etc. There are a lot of predefined CP/M formats available. It is also possible to adapt existing or define new formats for own purposes.

	A	B	C
1	SAMCONV.xls Vers. 2.51 for various CP/M Diskette Formats		
2	Copyright © 2019-2024 by PAW, Vienna	Vers. 2.51	32 & 64 Bit Version
3	Using this software on your own risk!		
4	No warranty given for correct function of the program!		
5	Path (optional)		<div>Start Transfer ==> TO DOS</div>
6	Filename (without Path)	A2	
7	Default Extension	BIN	
8			
9	Type of Diskette	APPLE2-CPM65	<div>Start Transfer FROM DOS ==></div>
10	Filesystem	CP/M-65	
11			
12	UCSD Option on Textfiles (must be specified)	COPY 1:1	
13	Warning Option, give warnings at deleting file, etc.	NO	
14	Option: Use Sequence Prefix for DOS files	NO	
15	CP/M Option: Change Extensions from COM to CPM and back	YES	
16	CP/M Option: read deleted files from CP/M directory	NO	
17	Test Option: Write .LIN Files (Disk image in linear order)	NO	
18	UCSD Output Option: Write .VOL Files (for reading DSK files)	NO	
19	UCSD Output Option: Create duplicate directory	NO	
20			

This EXCEL sheet is programmed with Microsoft Office 2003, but should also work on newer EXCEL-versions.

The EXCEL sheets and the documentation are written in English language. A lot of information you will find in the EXCEL sheet itself, e.g. on HELP tab or in diverse column headers as comments.

System configuration:

Windows XP and later (32 or 64 bit)

EXCEL (Office 2003 till 2019). Office 365 has not been tested.

(It is not running on MAC, because path names are different!)

SAMCONV uses EXCEL macros, so you have to enable macros for running it. There are some options for security in EXCEL. E.g. in version 2003, there are four options: very high, high, middle and low. **Please do not use the low level!** The middle level is preferable, where you will be asked by EXCEL for running the macros. If you have set o a higher level, you can start it by using the program “SAMCONV-START.exe”. In this case “SAMCONV.xls” has to be in the same folder as the exe! This method works till version 2019.

Main Features Vers. 2.10

- Read and write without access to the physical diskettes (works only with disk images “.DSK” of the tool SAMdisk written by Simon Owen, see below)
- Run on Microsoft Windows with EXCEL (vers. 2003 ... 2019 / 32 or 64Bit)
- Read files from CP/M disk images to a DOS folder
- Write files from DOS folder to CP/M structured disk image
- Filters for choosing diverse formats
- Select a predefined format from sheet DISKDEF by clicking a button
- Define own formats in sheet DISKDEF (or copy from another EXCEL sheet)
It is similar to the definitions of other tools: SKEW, INTERLEAVE, FILLORDER, etc.
- Option: Generate a sequence number for DOS files as prefix, in order of reading CP/M files from image. On writing back to CP/M image, so the sequence of the files may be controlled and the prefix will be deleted automatically.
- Option: Change CP/M filenames with extension “COM” to “CPM” when writing to DOS and back when writing to CP/M.
- Short Help Screen
- Integrated help items at several cells (when this option is activated in EXCEL extras)
- SCAN-Function for Standard-Testdisks. This function can read out all parameters for CP/M-conversion needed. The input is a Standard-Testdisk created on an alien CP/M-computer.

New Feature Vers. 2.30

- Running on 32 and 64 Bit EXCEL platforms under Windows (not on MAC!)
- CP/M option for reading deleted files (if possible)
- Converts some “new” UCSD formats like ALTOS and SAGE2
- Definable character translation tables for UCSD textfiles (max. 10 tables)
- UCSD volume files for BIG (Motorola CPUs) or LITTLE ENDIAN (Intel CPUs)
- Option for creating a duplicate directory on UCSD

Bug fixed Vers. 2.40

- Now is working with formats having more than 29 sectors. (e.g. SISYPHUS witch has up to 48 sectors)

**New Feature Vers. 2.51**

- CP/M-65 format has been implemented. Input (only) for this may be a BIN file
- Copy system tracks from a SYS file to the new disk image (for most CP/M formats)

Some Feature Details

Conversion FROM	→	TO DOS
Diverse CP/M	→	DOS Files
P2000M-CP/M	→	DOS Files
P2000M-DISK-BASIC	→	DOS Files
P2000M-UCSD	→	DOS Files
P2000M-UCSD	→	DOS-UCSD-Volume-Files
P2500-CP/M SS	→	DOS Files
P2500-CP/M DS	→	DOS Files
P2500-DISK-BASIC	→	DOS Files
P2500-UCSD	→	DOS Files
P2500-UCSD	→	DOS-UCSD-Volume-Files
P2000C-CP/M	→	DOS Files
P3500-TurboDOS	→	DOS Files
IBM-PC 160KB UCSD	→	DOS Files
IBM-PC 320KB UCSD	→	DOS Files
PC-UCSD-Volume	→	DOS Files
PC-UCSD-Volume	→	DOS-UCSD-Volume-Files
PHIL-UCSD-Volume	→	DOS Files
PHIL-UCSD-Volume	→	DOS-UCSD-Volume-Files
ALTOS-UCSD	→	DOS Files
SAGE2-UCSD	→	DOS Files
SAGE2-UCSD-Volume	→	DOS Files
UCSD-VOL-BIG	→	DOS Files
UCSD-VOL-LITTLE	→	DOS Files

Conversion FROM DOS	→	Conversion TO
DOS Files	→	Diverse CP/M
DOS Files	→	P2000M-CP/M
DOS Files	→	P2000M-DISK-BASIC
DOS Files	→	P2000M-UCSD
DOS Files	→	P2500-CP/M SS
DOS Files	→	P2500-CP/M DS
DOS Files	→	P2500-UCSD
DOS Files	→	P2000C-CP/M
DOS Files	→	P3500-TurboDOS
DOS Files	→	PC-UCSD-Volume
DOS Files	→	PHIL-UCSD-Volume
DOS Files	→	ALTOS-UCSD
DOS Files	→	SAGE2-UCSD
DOS Files	→	SAGE2-UCSD-Volume
DOS Files	→	UCSD-VOL-BIG
DOS Files	→	UCSD-VOL-LITTLE

Licence for using SAMCONV.xls:

The use is only for private purposes. You can use it on your own risk! There is no warranty that it works as described. You can copy or distribute the complete package (not parts of it) without charge, but it must not be sold, modified or disassembled in any way.

Notes to SAMdisk, which may be used to create the disk images from the diskettes:

SAMdisk is a command line tool for read and write disk images of soft sector floppies, independent from the operating system used on the disks. So there can be saved CP/M, UCSD and other formats. SAMdisk works under Windows 2000 or later Versions of Windows. You need a floppy controller compatible to μ PD765 and successors. The program has been written by Simon Owen. (<http://simonowen.com/samdisk/>).

With SAMdisk it is possible to convert other formats like Teledisk “.td0” and Imagedisk “.IMD” to its own format “.DSK” and back!

Notes to FLUXCOPY, which may be also used to create the disk images from the diskettes:

FLUXCOPY is a tool which uses the hardware FLUXTEEN to read out diverse diskettes on flux level. This works on windows PCs (Win XP and newer) via USB and an external disk drive connected to FLUXTEEN. For PC compatible, soft sector, disks it is possible to create images in EXTENDED CPC DSK format by FLUXDUMP. They may be accessed with SAMCONV.xls

At this time FLUXCOPY cannot write back such DSK files to disk directly. You have to “Load” the DSK file by HxC software and “Export” to “KF Stream file (*.raw)” files. Than convert the raw files to FLX files by using FLUXKRYOCONV. The FLX files can than be written to a physical disk.

Using SAMCONV.xls Version 2

Because SAMdisk has no logic to extract files from the disks, this EXCEL-sheet has been written to transfer all files from CP/M- or UCSD-disk images to DOS. (UCSD images only for some computers available and cannot be customized!) In addition it is possible to write DOS files to a new disk image, which can be accessed by SAMdisk and written back to a new floppy. You can write only a complete disk at once and not add single files to an existing disk.

This is the start page, but go at first to sheet DISKDEF to select a format (or to HELP sheet).

3	Using this software on your own risk!		
4	No warranty given for correct function of the program!		
5	Path (optional)		Start Transfer ==> TO DOS
6	Filename (without Path)	SamImage	
7	Default Extension	DSK	
8			
9	Type of Diskette	SISYPHUS	SISYPHUS
10	Filesystem	CP/M	
11			Start Transfer FROM DOS ==>
12	UCSD Option on Textfiles (must be specified)	COPY 1:1	
13	Warning Option: give warnings at deleting file, etc.	NO	
14	Option: Use Sequence Prefix for DOS files	NO	
15	CP/M Option: Change Extensions from COM to CPM and back	YES	
16	CP/M Option: read deleted files from CP/M directory	NO	
17	Test Option: Write .LIN Files (Disk image in linear order)	NO	
18	UCSD Output Option: Write .VOL Files (for reading DSK files)	NO	
19	UCSD Output Option: Create duplicate directory	NO	
20			
28			

On the sheet **HELP** you will find a quick instruction for using this tool.

On sheet DISKDEF you can select, what type of diskette you want to convert. Here is a small part of the format list. There are filter buttons on each column to make the selection of the right format easier. Then click a field in the appropriate line and then press the button "SELECT DISK TYPE". Some of the fields will be copied to the start page. It will be switched back to the start page. (See picture above ... SISYPHUS has been selected)

3	INDEX	Groups	COMMENT	Filter OFF	SELECT DISK-TYPE	SYSTEM empty = CP/M	Def. Ext.	Disk Parameters	Disk Diam.	Modul. FM/MFM	DENS. LO/HI	Data- Mode	CYLs
4													
29	ALPHA-P3	Alphatronic	Alphatronic P3			CP/M	DSK	D8DD 96tpi 5x1024 790KB	5.25"	MFM	LOW		80
30	ALPHA-P2	Alphatronic	Alphatronic P2			CP/M	DSK	S8DD 48tpi 16x256 152KB	5.25"	MFM	LOW		40
31	ALPHA-PC8	Alphatronic	Alphatronic PC8			CP/M	DSK	D8DD 48tpi 16x256 304KB	5.25"	MFM	LOW		40

All of the formats may be selected for transfer to DOS. For the other direction (from DOS) all CP/M formats may be selected and only some of the other systems. The parameters of the NON-CP/M formats should not be changed!

SYSTEM TRACKS / RESERVED TRACKS

Reserved tracks (system tracks) will not be read, when they have an other geometry than the rest of the disk. On transfer to CP/M, the reserved tracks will be filled with undefined data. If you need to **create a bootable disk**, you have to copy the correct boot tracks after writing the CP/M disk image to the diskette. The tool SAMdisk is able to copy one or more tracks from a physical diskette to an image and write it back to another diskette. So you get a bootable disk, when you copy the sys tracks from a bootable disk. Creating a bootable disk without an existing image of the boot sectors is not possible.

Alternative to write system tracks

Now it is possible to copy system tracks from a SYS file by SAMCONV during writing an image from DOS. See chapter TRANSFER FROM DOS / Alternative to write system tracks

TRANSFER TO DOS

The source file (".DSK" or ".VOL") has to be in directory specified by path. When path is empty, then path links to current directory of the EXCEL-sheet. The destination files will also be stored in this folder, but in a subfolder named "####DOS####", which will be deleted before. Filenames will be adapted to DOS conventions. If there are name collisions, they will be renamed. In Addition a file type ".LIN" will be written (is an option), which contains data of the image in linear sequence (on disk image the sectors are not in logical sequence) and the additional information's like disk- and track-headers are omitted. For CP/M-65 the source file is binary ".BIN" without any additional informations.

CP/M to DOS

If there are CP/M users different to 0, then extra subfolders will be created in "####DOS####" like "####DOS####\USER15" for user 15.

CP/M Option: Change Extensions from COM to CPM and back

YES ... ".COM" files of CP/M will be renamed to ".CPM" files in DOS.

CP/M Option: Use Sequence Prefix for DOS files

YES ... ToDOS: adds a sequence number as prefix in front of each DOS file name like
"@§001§@_"

UCSD to DOS

In UCSD there are different file types known: 2 for programs, 3 for text files, 5 for data files and others. In addition a special extension is used (but not always): CODE for programs, TEXT for text files and DATA for data files.

These attributes will be used for finding new extensions for DOS:

UCSD file type	UCSD extension	DOS extension
Type 2	.CODE	.FT2.COD
Type 2	none	.FT2
Type 3	.TEXT	.FT3.TXT
Type 3	none	.FT3
Type 5	.DATA	.FT5.DAT
Type 5	none	.FT5

The following DOS filenames not allowed: CON, PRN, LPT1 till LPT9, so they will be change to "CON@" and so on.

Start Transfer to DOS

To start the conversion TO DOS, press the “**Start Transfer → TO DOS**”-Button

1.) For transfer from CP/M disk image (SamImage.dsk) to DOS following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet
Input file:	SamImage
Extension:	DSK
Type of Diskette:	P25S
Filesystem:	CP/M

2.) For Transfer from UCSD disk image (SamImage.dsk) to DOS following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet
Input file:	SamImage
Extension:	DSK
Type of Diskette:	P25SU
Filesystem:	UCSD-P2500
UCSD Option:	COPY 1:1 ... copies all files 1:1 to DOS
	TextFileTranslation ... UCSD-prefix will be removed on text files
	special characters ÄÖÜ etc. will be translated

3.) For Transfer from PHILIPS-DISK-BASIC disk image (SamImage.dsk) to DOS following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet
Input file:	SamImage
Extension:	DSK
Type of Diskette:	P2MB
Filesystem:	DISKBASIC-P2000M

4.) For Transfer from PC-UCSD disk image (SamImage.dsk) to DOS following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet
Input file:	SamImage
Extension:	DSK
Type of Diskette:	IBM160U or IBM320U
Filesystem:	UCSD-IBM
UCSD Option:	same as above

The following types are **not disk images**, but files with UCSD-volumes. These files may be mounted or created with UCSD-emulator under DOS.

5.) For Transfer from PC-UCSD-file (UCSD.VOL) to DOS following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet
Input file:	SamImage
Extension:	VOL
Type of Diskette:	PC-UCSD
Filesystem:	UCSD-VOL-PC

6.) For Transfer from PHIL-UCSDVOL-file (UCSD.VOL) to DOS following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet
Input file:	SamImage
Extension:	VOL
Type of Diskette:	PHIL-UCSDVOL
Filesystem:	UCSD-VOL-PHIL

Main difference between 5.) and 6.) is the different special character translation in text files!

7.) For transfer from CP/M-65 disk image (BinImage.BIN) to DOS following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet
Input file:	BinImage
Extension:	BIN
Type of Diskette:	APPLE2-CPM65
Filesystem:	CP/M-65

TRANSFER FROM DOS

The source files has to be in sub directory “####DOS####” in folder specified by path. When path is empty, then path links to current directory of the EXCEL-sheet. The destination file (“.DSK_NEW” or “.VPC”) will also be stored in same folder as the subfolder “####DOS####” is located. The destination file will be deleted before. All files in the subfolder “####DOS####” will be transferred to the target. If the target is CP/M then all files will be transferred to user 0. If there are additional subfolders named USER0 till USER31 in the folder “####DOS####”, then they will also be transferred, but to the corresponding user IDs (for CP/M only users 0 to 15 allowed). Transfer to other systems will ignore subdirectories. Filenames will be adapted to the destination system conventions. “.CPM” files in DOS will be translated to “.COM” files for CP/M disk image files. If there are name collisions, they will be renamed.

DOS to CP/M

CP/M Option: Change Extensions from COM to CPM and back

YES ... “.CPM” files of DOS will be renamed to “.COM” files in CP/M

CP/M Option: Use Sequence Prefix for DOS files

YES ... FromDOS: removes the sequence number "@\$001\$@_" before writing to CP/M. The files will be written in the same order as they appear in the DOS directory, starting with root directory. By using prefix numbers, the order in the directories may be defined other than alphabetical. At first all files of root directory will be accessed, then the sub directories starting with User0, 1, 2,... (It is not possible to change the order of the directories!)

If there are subfolders with special names like USER0 to USER31 in the DOS source directory, “####DOS####” (e.g. “####DOS####\USER15”) then the files in it will be copied to the corresponding user in CP/M. Note that CP/M allows only a maximum user of 15, TurboDOS till 31. This limit will be checked by SAMCONV.

DOS to UCSD

At the following DOS filenames CON@, PRN@, LPT1@ till LPT9@ the character “@” will be removed from UCSD filenames, e.g.: “CON”

In UCSD there are different file types known, see above at UCSD to DOS

These DOS extension will be used to create the UCSD file type and extension:

DOS extension	UCSD file type	UCSD extension
.FT2.COD	Type 2	.CODE
.FT2	Type 2	none
.FT3.TXT	Type 3	.TEXT
.FT3	Type 3	none
.FT5.DAT	Type 5	.DATA
.FT	Type 5	none

Start Transfer from DOS

To start the conversion FROM DOS, press the “**Start Transfer FROM DOS →**”-Button

1.) For transfer from DOS to CP/M disk image (SamImage.DSK_NEW) following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet	
Output file:	SamImage	
Extension:	DSK	“_NEW” will added to extension for output file
Type of Diskette:	P25S	
Filesystem:	CP/M	

2.) For Transfer from DOS to UCSD disk image (SamImage.DSK_NEW) following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet	
Output file:	SamImage	
Extension:	DSK	“_NEW” will added to extension for output file
Type of Diskette:	P25SU	
Filesystem:	UCSD-P2500	
UCSD Option:	COPY 1:1 ... copies all files 1:1 from DOS	
	TextFileTranslation	... UCSD-prefix will be added on text files special characters ÄÖÜ etc. will be translated

3.) For Transfer from DOS to PHILIPS-DISK-BASIC disk image (SamImage.DSK_NEW) following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet		
Output file:	SamImage		
Extension:	DSK	“_NEW” will added to extension for output file	
Type of Diskette:	P2MB		
Filesystem:	DISKBASIC-P2000M		

4.) Transfer from DOS to PC-UCSD disk image **not available!**

The following types are **not disk images**, but files with UCSD-volumes. These files may be mounted or created with UCSD-emulator under DOS. No template is necessary for them.

5.) For Transfer from DOS to PC-UCSD-file (UCSD.VPC) following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet		
Output file:	SamImage		
Extension:	VOL	(is not relevant for output, it is always VPC)	
Type of Diskette:	PC-UCSD		
Filesystem:	UCSD-VOL-PC		

6.) For Transfer from DOS to PHIL-UCSDVOL-file (UCSD.VPC) following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet		
Output file:	SamImage		
Extension:	VOL	(is not relevant for output, it is always VPC)	
Type of Diskette:	PHIL-UCSDVOL		
Filesystem:	UCSD-VOL-PHIL		

7.) For transfer from DOS to CP/M-65 disk image (BinImage.BIN:NEW) following fields are relevant:

Path:	if empty ... the input file has to be in same folder as the EXCEL-sheet		
Output file:	BinImage		
Extension:	BIN	“_NEW” will added to extension for output file	
Type of Diskette:	APPLE2-CPM65		
Filesystem:	CP/M-65		

Alternative to write system tracks

To make a disk bootable it is necessary to have correct system tracks. Normally SAMCONV do not use these tracks. SAMCONV cannot create system tracks, but it may copy it from an existing disk image.

For this purpose you have to provide a SYS file in the same directory, The name of this file must be "Disktype.SYS", where DiskType is exactly the name in the sheet "DISKDEF" in column "INDEX". So it is possible to make one specific SYS file for each format in the sheet. If you need different boot tracks for the same format, you have to create extra lines in the sheet "DISKDEF" with different names of the format in column "INDEX", but with same parameters.

e.g.: "APPLE2-CPM65.SYS"

To create a SYS file, you may simply copy a source image file and rename it. If it takes too much space, you may remove the data tracks from the SYS file. Only the system tracks will be needed.

If there will not be found a corresponding SYS file in the folder, the content of the system tracks will be undefined.

Attention: This feature will not work with all formats! There are some complex formats, what do not have full tracks for system (only partly). So you have to try out if it works or not.

Attention: The SYS file must have same structure as your image files for this format. When using DSK files as output, you have to copy a DSK file to SYS. On CP/M-65 you use usually a BIN file as input and so you have to copy a BIN file to SYS.

EXTRA INFORMATIONS

During the transfer some extra information's can be found on sheet DIR.
The sheet is used during converting the directories.

The sheet RAWDIR is used only for transfer from CP/M to DOS and only for internal use.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2			Netto Capacity of Disk (excl. Systracks) in KB	Free Disk Space in KB	Total File Size in Bytes	Total File Size on Disk in KB							
3			298	126	154.880	172							
4													
5	LINE NO	Index	USER or PATH	FILENAME	SIZE in Byte	SIZE in KB	Last Access	Time	Message	DOS-PATH	FILE-NAME	FILE-EXT	DOS-FILENAME
6	1	0		0 BTCBI.MAC	7.808	8					BTCBI	MAC	BTCBI.MAC
7	2	1		0 BTPR.MAC	1.536	2					BTPR	MAC	BTPR.MAC
8	3	2		0 CBBOOT.MAC	3.072	4					CBBOOT	MAC	CBBOOT.MAC
9	4	3		0 CBBOVL.MAC	4.224	6					CBBOVL	MAC	CBBOVL.MAC
10	5	4		0 CBCHAR.MAC	5.120	6					CBCHAR	MAC	CBCHAR.MAC
11	6	5		0 CBDBLK.MAC	9.984	10					CBDBLK	MAC	CBDBLK.MAC
12	7	6		0 CBDVAR.MAC	6.656	8					CBDVAR	MAC	CBDVAR.MAC
13	8	7		0 CBIOS.MAC	7.680	8					CBIOS	MAC	CBIOS.MAC
14	9	8		0 CBPRNHND.MAC	3.968	4					CBPRNHND	MAC	CBPRNHND.MAC
15	10	9		0 CFKB TABS.MAC	4.608	6					CFKB TABS	MAC	CFKB TABS.MAC
16	11	10		0 CFP21BIL.MAC	3.712	4					CFP21BIL	MAC	CFP21BIL.MAC
17	12	11		0 CFP21ESA.MAC	3.328	4					CFP21ESA	MAC	CFP21ESA.MAC
18	13	12		0 CFP23DA.MAC	2.944	4					CFP23DA	MAC	CFP23DA.MAC
19	14	13		0 CFP23F.MAC	3.072	4					CFP23F	MAC	CFP23F.MAC
20	15	14		0 CFP23SF.MAC	2.688	4					CFP23SF	MAC	CFP23SF.MAC
21	16	15		0 CFP23UKE.MAC	2.944	4					CFP23UKE	MAC	CFP23UKE.MAC
22	17	16		0 CFPASCII.MAC	384	2					CFPASCII	MAC	CFPASCII.MAC
23	18	17		0 CFPMT100.MAC	3.200	4					CFPMT100	MAC	CFPMT100.MAC
24	19	18		0 CFPMT1TR.MAC	3.584	4					CFPMT1TR	MAC	CFPMT1TR.MAC
25	20	19		0 CFTABLES.MAC	3.200	4					CFTABLES	MAC	CFTABLES.MAC
26	21	20		0 CONF.MAC	42.496	42					CONF	MAC	CONF.MAC
27	22	22		0 CONREC.MAC	3.584	4					CONREC	MAC	CONREC.MAC
28	23	23		0 INIT.MAC	11.136	12					INIT	MAC	INIT.MAC
29	24	24		0 PREP.MAC	13.952	14					PREP	MAC	PREP.MAC
30													

There you can see, if a filename has to be changed, because of character restriction on target system. Also the name is changed if there is some filename twice. (May be when filename has to be changed.) There will be a notice in column "Message". Also you can see the capacity of the disk and how much space is available. If there is not enough space, you will get a message. In this case you have to reduce the number of files to be transferred.

ATTENTION! The sheets DIR and RAWDIR must not be changed or deleted!

USER-DEFINED CHARACTER TRANSLATION TABLE FOR UCSD TEXTFILES

For UCSD text file conversion you can specify up to 10 user defined translation tables.
(Not possible for CP/M files!)

	A	B	C	D
1	USER-DEFINED CHARACTER TRANSLATION TABLE FOR UCSD TEXTFILES			
2				
3	The values in this table are only for example and equal to Philips XL-PHI			
4				
5	On transfer ToDOS all Alien-Sequences will be replaced by PC-DOS-Sequences, if TextFileTranslation is activated			
6	On transfer FromDOS all PC-DOS-Sequences will be replaced by Alien-Sequences, if TextFileTranslation is activated			
7	Up to 100 lines are possible.			
8				
9	ALIEN	PC-DOS	Comment	
10	Ä	À		197
11	å	Ã		229
12	ä	Ü		237
13	ö	ä		213
14	ø	õ		245
15	ý	ü		253
16	û	ß		251
17	À	*		194
18			END	
19				

In the sheet DISKDEF column “Data Mode” you can specify a table, named XL-0 to XL-9.
For each there must be a corresponding sheet with the same name. You can use the same translation table in different format definitions.

The first column in the XL-sheet contains the alien sequence, the second the DOS sequence.
Stops at first line which is empty in column A.

There are two predefined translation tables:

- "XL-IBM" ... text translation for IBM
- "XL-PHI" ... text translation for Philips

Using the SCAN-Function for CP/M-Formats

For using the scan function, a Standard-Testdisk has to be created on the alien CP/M-computer.

Note: At this time it is not possible to scan formats with more than 29 sectors!

What is a Standard-Testdisk?

This is CP/M-formatted disk with special data files on it. To get all relevant parameters from it, it is necessary to write all directory entries and also all data units with well defined data.

With this Standard-Testdisk all parameters for converting a CP/M format can be specified!

Structure of a Standard-Testdisk

At first the directory will be filled with null-files (length = 0 bytes). The filenames will start with "TEST_001.TXT" and counts up the number. When directory is full, files will be deleted. Then one big file named "TEST_000.TXT" will be written and fills the whole diskette with 128 byte records. Each record must start with following data "000001 TESTDATEN", where the number will count up, start at 000001. On MBASIC an error occurs at the end, but the file will not be removed from the disk. If the file "TEST_000.TXT" is not stored, see Part3 below!

Creating a Standard-Testdisk

For this purpose you need a working alien computer (for what you want to determine the converting parameters) with a CP/M system (e.g. Vers. 2.2) and MBASIC.

The disk must be cleared completely with a strong magnet before writing on it! This is necessary, to prevent programs that scans the disk image from reading some invalid fragments of disk data. Then the disk has to be formatted on the alien system. If you have no program for formatting the disk, you can use an original disk and delete all files with ERA (not with magnet). Preferable first way!

I have written a short MBASIC program on my Philips 2500 for CP/M 2.2, what can create the whole Standard-Testdisk. This will take some minutes, depending on the capacity of the disk.

```

10 REM TESTDISK V0.20 FOR SAMCONV ON ALIEN-COMPUTER
11 REM DELETE DISKETTE WITH MAGNET AND FORMAT NEW
12 REM WRITES NULLFILES, TILL DIRECTORY IS FULL
13 REM THEN DELETE ALL FILES
15 REM FILLS THE COMPLETE DISK B:, TILL ERROR OCCURS
20 REM THE REM-LINES MAY BE OMMITED
25 REM -----
30 GOTO 60
50 N$=STR$(R):N$=STRING$(4-LEN(N$),"0") + MID$(N$,2):D$=F$+N$+".TXT":RETURN
60 F$ = "B:TEST_"
70 ON ERROR GOTO 200

```



```
80 FOR R=1 To 1024:GOSUB 50:OPEN "R",2,D$:PRINT "NEW ";D$:CLOSE 2:NEXT R
200 RESUME 230
230 ON ERROR GOTO 0
250 REM REMOVES THE NULL-FILES
252 REM -----
260 I=R-1: FOR R = 1 To I: GOSUB 50: KILL D$: PRINT "DEL ";D$: NEXT R
270 REM WRITES BIG TEXT FILE, TILL DISK IS FULL
272 REM -----
280 C$=" TESTDATEN " + STRING$(109, "="): OPEN "O",1,F$ + "000.TXT"
290 FOR I=1 TO 15000: N$=STR$(I): N$=STRING$(7-LEN(N$),"0") + MID$(N$,2)
300 PRINT N$: PRINT #1,N$;C$: NEXT I: END
```

If you have no possibility to transfer the program to your alien system, you can type it directly into your MBASIC program. In this case you may omit the lines with remarks “REM”.

Description to the BASIC Program

The program is written for a target disk in drive B:

If you need another drive, you can change the drive letter line 60. e.g.: for drive A: ...
F\$="A:TEST_" . The rest of the filename must not be changed! Do not use letters other than
diskette drives. If you take a letter for a hard disk, the whole disk may be deleted!!!

Important: Drive letters and filenames in MBASIC have to be written with upper case!

The program consists of three parts.

Part1: FOR-loop starting in line 80, writes null files, till the whole directory is full. At some BASCI variants it is possible, that you can't write null files, but files with a minimum size of one CP/M unit. In this case, the real size of directory can't be determined (DRM parameter in CP/M) and may be too small. When the directory is full an error occurs. This error is captured by the ON-ERROR command and part 2 will be started.

Part2: FOR-loop starts at line 260. It deletes all files on the disk again. The entries in the directory will be marked with hex E5 as deleted. So we can detect the number of possible directory entries later.

Part3: Preparation and FOR-loop start at line 280. It creates the big text file, filling the whole disk with 128 byte data records until the error occurs: “Disk full in 300”. Then the Standard-Testdisk is complete. On the P2500 the file is saved on the disk with the current length. If the file is not stored, you have to note the last record was written before the error occurs. You have to change the TO value in line 290 from 15000 to the last possible record number, so that the file will be stored on the disk, without an error.

Sample of a Standard-Testdisk

Here is a sample of a Philips P2500 disk (77 tracks, single side, 256 byte sectors)

The directory starts at track 2. Due to interleave, the address range in the hardcopy is not without gaps.

Adresse	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	0123456789ABCDEF
0000.2400	00	54	45	53	54	5F	30	30	30	54	58	54	01	00	00	80	.TEST_000TXT....
0000.2410	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	.....
0000.2420	00	54	45	53	54	5F	30	30	30	54	58	54	03	00	00	80	.TEST_000TXT....
0000.2430	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	.....
0000.2440	00	54	45	53	54	5F	30	30	30	54	58	54	05	00	00	80	.TEST_000TXT....
0000.2450	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F	30	!"#\$%&'()*+,-./0
0000.2460	00	54	45	53	54	5F	30	30	30	54	58	54	07	00	00	80	.TEST_000TXT....
0000.2470	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F	40	123456789:;<=>?@
0000.2480	00	54	45	53	54	5F	30	30	30	54	58	54	09	00	00	80	.TEST_000TXT....
0000.2490	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	ABCDEFGHIJKLMN
0000.24A0	00	54	45	53	54	5F	30	30	30	54	58	54	0B	00	00	80	.TEST_000TXT....
0000.24B0	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F	60	QRSTUVWXYZ[\]^_`
0000.24C0	00	54	45	53	54	5F	30	30	30	54	58	54	0D	00	00	80	.TEST_000TXT....
0000.24D0	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F	70	abcdefghijklmnop
0000.24E0	00	54	45	53	54	5F	30	30	30	54	58	54	0F	00	00	80	.TEST_000TXT....
0000.24F0	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F	80	qrstuvwxyz{|}~..
0000.2600	00	54	45	53	54	5F	30	30	30	54	58	54	11	00	00	80	.TEST_000TXT....
0000.2610	81	82	83	84	85	86	87	88	89	8A	8B	8C	8D	8E	8F	90	.....
0000.2620	00	54	45	53	54	5F	30	30	30	54	58	54	12	00	00	50	.TEST_000TXT...P
0000.2630	91	92	93	94	95	00	00	00	00	00	00	00	00	00	00	00	.....
0000.2640	E5	54	45	53	54	5F	30	31	31	54	58	54	00	00	00	00	.TEST_011TXT....
0000.2650	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0000.2660	E5	54	45	53	54	5F	30	31	32	54	58	54	00	00	00	00	.TEST_012TXT....
0000.2670	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....

till

0000.3280	E5	54	45	53	54	5F	30	36	31	54	58	54	00	00	00	00	.TEST_061TXT....
0000.3290	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0000.32A0	E5	54	45	53	54	5F	30	36	32	54	58	54	00	00	00	00	.TEST_062TXT....
0000.32B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0000.32C0	E5	54	45	53	54	5F	30	36	33	54	58	54	00	00	00	00	.TEST_063TXT....
0000.32D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0000.32E0	E5	54	45	53	54	5F	30	36	34	54	58	54	00	00	00	00	.TEST_064TXT....
0000.32F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
Adresse	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	0123456789ABCDEF

The data records of file TEST_000.TXT

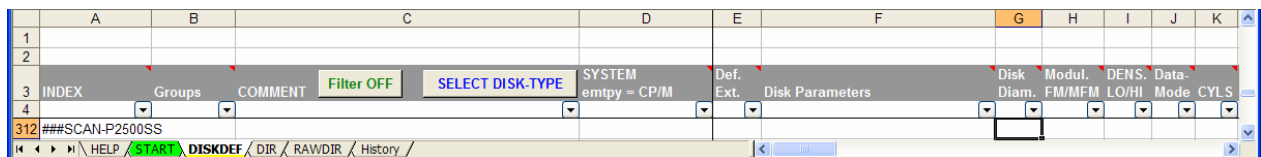
Adresse	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	0123456789ABCDEF
0000.2500	30	30	30	30	30	31	20	54	45	53	54	44	41	54	45	4E	000001 TESTDATEN
0000.2510	20	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.2520	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.2530	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.2540	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.2550	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.2560	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.2570	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	0D	0A	=====..
0000.2580	30	30	30	30	30	32	20	54	45	53	54	44	41	54	45	4E	000002 TESTDATEN
0000.2590	20	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.25A0	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.25B0	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.25C0	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.25D0	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.25E0	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	=====
0000.25F0	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	0D	0A	=====..

Reading out the CP/M Parameters

At first the disk has to be scanned to a disk image of type “.DSK” with e.g. SAMdisk.

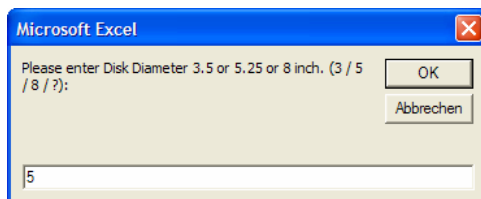
Rename .DSK file to “ALIEN-xxxxx”, where xxxxx may be any valid filename.
E.g.: for my 2500 disk I used “ALIEN-P2500SS.dsk”

In the sheet DISKDEF you have to insert a line with the name “###SCAN-xxxxx” in column INDEX, where xxxxx is the same text as in the ALIEN-name.
E.g.: for my 2500 disk I used “###SCAN-P2500SS.dsk”

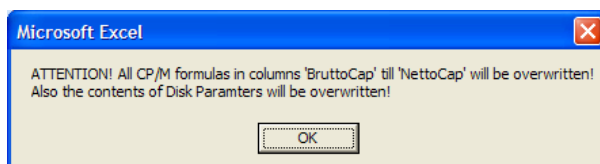


Click a cell in the line “###SCAN-P2500SS.dsk” and then press the button SELECT DISK-TYPE.

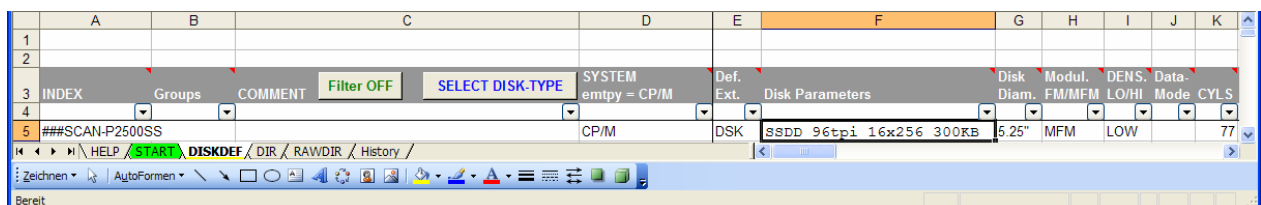
Now SAMCONV checks the Standard-Testdisk. If no value is stored in column Disk Diameter, you will be asked for it, because this value can't be read out of the file! Only the first character is relevant. E.g. 5 <Enter> for a 5.25 inch disk



Then a warning occurs.



This is the result of the scan.



After writing the parameters into the line (by SAMCONV), you can write a comment into the column COMMENT, e.g. a text concerning the alien computer (model, manufacturer, etc.). Also change the name in the column INDEX. Remove the text “###SCAN-“. When it has been done, you can make a copy of the ALIEN-DSK file to e.g. SamImage.dsk. So you can read it by SAMCONV to DOS. Only one file should be transferred: "TEST_000.TXT".

Open it and look for the text.

```
000001 TESTDATEN
=====
=====
000002 TESTDATEN
=====
=====
000003 TESTDATEN
=====
=====
000004 TESTDATEN
=====
=====
000005 TESTDATEN
=====
=====
```

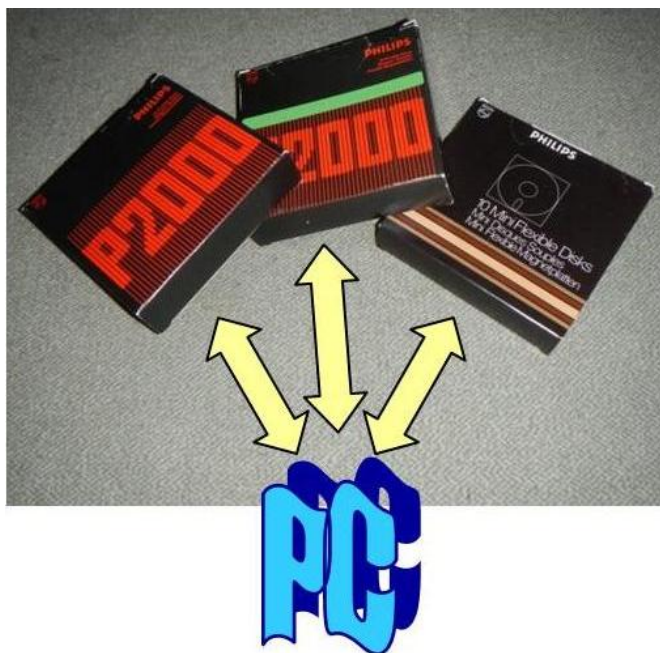
You can open the file with “Editor”. The numbers should be linear till end of the file.

Now you are able to transfer other CP/M disks from/to alien disk images!

Additional information about the handling of CP/M diskette formats can be seen at the following links (written in German language). There is also information about getting additional disk formats from other sources:

<https://forum.classic-computing.de/forum/index.php?thread/18831-samconv-2-0-konvertierung-cp-m-disketten-images-zu-dos-und-zur%C3%BCck/>

<https://forum.classic-computing.de/forum/index.php?thread/17789-diskettenhandling-f%C3%BCr-philips-computer-p2000m-p2500-p2000c-und-p3500-p3800/>



Kind Regards

PAW