



autoDC

floppy disk creation
for **OSI** computers



Auto Disk Create (autoDC)

autoDC is a process to semi-automate the creation of real floppies from WinOSI disk images. It requires the use of:

• WinOSI v1.3	www.markslab.com
• The Tera Term comms application	https://ttssh2.osdn.jp/index.html.en
• HxD (or similar) hex editor	https://mh-nexus.de/en/hxd
• Notepad++ is also recommended	https://notepad-plus-plus.org/

autoSI is a relocated OSI DOS @ \$0F00 with added commands to read tk0 and split images:

DI tk,tk	Command for tk-tk track-sector lists of a disk
RO	Command reads tk0 to a buffer at \$2000
SI tk,tk	Splits image to the buffer for the range tk-tk

This DOS is run under WinOSI v1.3 to auto split images which are then manually saved as .LOD files using CEGMON save. A minimal number of large split files is used. Images are split automatically to a max length HIMEM - \$2000

NOTE 1

A Tera Term macro file is edited to match the image track-sector layout and split file names. The use of templates keeps this editing to a minimum. (Macro templates and example splits are included in this download)
A boot disk is initially created by the process. This **autoDC Boot Disk** running on the OSI system, character handshakes with a Tera Term macro to acknowledge the receipt of the serialied split files and DOS commands. Under control of the macro the target disk is initilaised, and the instructed tracks and sectors are written from the sent split files. tk0 is then written and the floppy boots on completion - All automatic and hands free!

Timing is for 1MHZ clock. Change 1MS DLY and STEPRT appropriately.

137B	C7	1MS DLY @1MHZ	HxD offset D77
13A3	08	8MS STEPRT	HxD offset DEF



Creating an autoDC boot disk

First run the Tera Term macro **autoDC BootDisk create.ttl**
This initialises a blank floppy and creates the **autoDC Boot Disk**. This disk can be used to create subsequent disks from split images using the autoDiskCreate process.

** SYNMON users need set the following in memory before beginning the process below:*
\$2200 = 4C
\$2201 = 00
\$2202 = 0F

1	Install Tera Term in the default teraterm folder and copy the contents of the Upload folder to the Tera Term folder	
2	Run Tera Term. Select 'Serial' connection and select the correct coms port for your setup	
3	→ Setup → Serial port	Data: 8 bits Parity: None Stop bits: 2
4	> M	On the OSI reset to monitor. Press 'M'
5	> L	On the OSI enter the machine code load mode 'L'
6	→ Control → Macro → autoDC folder → autoDC BootDisk.ttl → Open Runs the macro from Tera Term. Follow the onscreen terminal prompts to create an autoDC boot disk. Once the autoDC boot disk has been created, write protect and label it.	
DONE		

autoSI SplitImage process

5.25” version

First we need to setup WinOSI. Launch WinOSI v1.3

→ Options → System config	Emulation = C4 C4P (502 board) with BASIC enabled by default Disk Controller enabled - 5.25” drives 2 Serial Port = max speed (disable prompts)
→ Options → CPU Speed	CPU Speed = max

→ File → Edit Config	Kernel Type = 1 Kernel = CEGMON_C2E_noNULLs.ROM RAMTOP = 0x7FFF NOTE 1 SAVE the config file, Then quit and re-open WinOSI
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To split a disk into multiple files, complete the following. Then copy autoSI.img to the winOSI\diskImage folder.

1	<div>Alt + F A A</div>	Press Alt + F keys, then A, then A. Attach autoSI.img (HIMEM is set as per NOTE 1)
2	<div>Alt + F A B</div>	Press Alt + F keys, then A, then B. Attach the image of the disk that you wish to create to drive B:
3	D/C/W/M	Press 'D' to boot autoSI
4	A%SE B	Check image and create track-sector reference list. You will need to fix all track sector headers that are odd or report errors first. e.g. TRACK XX 01-01 3F-1C
5	B%Dl 01,39	Use the autoSI DI tk,tk command to verify image headers and record the track sector layout. Saving the output to a file is recommended for easier macro editing later: <div>F9 Select folder ML-Load\autoSI imagename tklist.txt (your reference file for easy macro edits) IO ,03 DI 01,39 (track 39 or the last track you wish to split) <div>F9</div> IO ,02</div>

6	B%SI tk,44	Split the track range of the image. On the first pass tk = 01 . This will fill memory from \$2000 to HIMEM max with the track data less headers <i>When LOOPING for successive splits use appropriate tk start numbers</i> NOTE 1B (About 12 - 15 tracks will fit in the 24k buffer)
7	<div>F9</div>	Press F9 function key. Open a serial output file named e.g imagename 1-XX.LOD . SAVE in ML-Load\autoSI. <i>When LOOPING for successive splits use output file named</i> imagename XX-YY.LOD NOTE 1B
8	B%RE M	Go Monitor (don't RESET- use RE M)
9	>S2000,EOF>02C6	SAVE .LOD file. EOF is the end of file address for the LAST sector successfully split. \$02C6 is autoDC re entry address.
10	<div>F9</div>	Closes serial output file
Split remaining tracks as required		
11	>1247G	Goto DOS. Relocated DOS entry address \$1247 for autoSI
12	Loop to step 6 ↺	Split and SAVE further tracks as required, creating the appropriate .LOD files. Then continue to step 13
Save track 0		
13	B% R0	Read tk0 to buffer
14	B% RE M	Go Monitor (don't RESET- use RE M)
15	<div>F9</div>	Attach a serial output file ML-Load\autoSI\imagename_tk0.LOD
16	>S2000,27FF>02C6	SAVE track 0 file in folder ML-load\autoSI
17	<div>F9</div>	Closes serial output file
DONE		

autoDC Disk Creation with Tera Term macros

Minimal editing of individual image macro files is required.

Note - for provided image splits with associated macro the only steps required are 1-2, 7-11 of this autoDC process.

1	Copy your imagename_tk-tk.LOD files saved in WinOSI\ML-load\autoSI to the sub folder autoSI in the teraterm directory.	
2	Run Tera Term.	
3	→ Control → Macro → Folder autoDC	Open the default_OSI_image.ttl macro in Notepad++ (back it up first)
4	Edit the xfer file names to imagename_tk-tk.LOD as appropriate. Lines with sendfile in the default macro file.	
5	Edit the track-sector layout of each track listed on the SA command lines to match your image file. Use you reference track-sector list reference OR the autoSI DI tk,tk command to display the track-sector layout of your image to aid the edit process	
6	Save edits under the name imagename.ttl in folder teraterm\autoDC. One for each image you split	
7	Tera Term → Setup → Serial port	Data: 8 bits Parity: None Stop bits: 2
8		Insert autoDC boot disk is in drive A:
9	D/C/W/M	Reset the OSI and press 'D' to boot the system with the autoDC boot disk. <i>* SYNMON users need set the following in memory before boot:</i> <i>\$2200 = 4C</i> <i>\$2201 = 00</i> <i>\$2202 = 0F</i>
10	A%	A% appears on Tera Term window. The OSI should display autoDC Ready . Remove the autoDC boot disk.
11		Insert a blank floppy in drive A:
12	→ Control → Macro → Folder autoDC	Open your imagename.ttl macro file in Tera Term and follow the terminal prompts.

DONE

FileXfer

A 24K split file will transfer in under 4 minutes at 4800 baud. About 12-15 tracks per split. The process should complete a disk creation in about 10 minutes.

If you encounter any transfer errors use → Control → Show macro → End. → File → Disconnect, then New Connection.
*TIP - Save you Tera Term setup to **teraterm.ini** in MyDocuments for a default config on boot.*

NOTE 1

A Having set WinOSI config to **RAMTOP=7FFF** DOS will set HIMEM to 7F. You may change this up to a maximum 9FFF (BASIC) for bigger splits, and for a slightly faster process. However all provided splits will use 7F with matching macros. It is easier to leave ramtop at 7F unless you're happy to edit the macros or have ROM in this space.

Ensure WinOSI has RAM only in your target buffer range \$2000 - HIMEM. No ROM or RAM extensions etc.
Using **CEGMON_C2E_noNULLs.ROM** saves having to remove nulls from you file splits. Copy to winOSI folder.

B Each use of the Split Image command, **SI tk,tk** will fill the memory buffer \$2000 - HIMEM with as many tracks that fit. About 12-15 tracks for 24k buffer. Use **SI tk,44** for each initial split. The 44 is an arbitrary number, just quick to type!! The last track **YY** successfully split into the buffer is indicated with the final EOF address to save to. The following track-sector, **XX** is declared 'Too Big' to fit the buffer.
Your next split starts from this track number XX eg. **SI XX,44**. Save each split as **imagename XX-YY** for each loop.

Ensure the last track of each saved split is a complete track and not split on sectors across two split files - for easy editing of the autoDiskCreate macro file. Save 1 track less if this occurs. For the final split use **SI XX,YY** as appropriate for the image. You may not need all 39 tracks and there is no point in saving tracks with no useful data to bloat your xfer file.

NOTE 2

In WinOSI v1.3, use the autoSI **DI tk,tk** command to verify image headers. Saving the track sector layout to a file is recommended to provide a reference when editing the macro files.

```
F9 Select folder ML-Load\autoSI  
imagename tklist.txt (your reference file for easy macro edits)  
IO ,03  
DI 01,39 (track 39 or the last track you wish to split)  
F9  
IO ,02
```

NOTE 3

For image files with similar track-sector layouts to the **default_OSI_image.ttl** or a previously created macro simply copy and rename these macros and do minimum edits as required saving under the new image macro name. The included Notepad++ Language file Tera Term.xml adds syntax highlighting to aid edits.

autoDC Boot Disk features

autoDC is also able to create split files from real floppies.

Send via serial to Tera Term with Cegmon save. Handy if you wish to save a track or a range of tracks.

For a full disk archive use Disk dump tools <http://osi.marks-lab.com/software/tools.html>

DI tk,tk	Command for tk-tk track-sector lists of a disk and verifying headers
SI tk,tk	Splits disk to a buffer at \$2000 for the range tk-tk
R0	Command reads tk0 to the buffer
A%RE V	Toggles video / terminal
A%GO 0F5E	Clear screen. GO 0F58 to restore GUI

A% Drive prompt changed to 'split' like character to distinguish from normal OS65D DOS

Macro path, folder and file conventions for easy edits

FOLDERS

WinOSI image split .LOD files save in WinOSI\ML-load\autoSI

Copy to teraterm\autoSI

Save Edit and Open Tera Term macros in teraterm\autoDC

FILES

Name .LOD split files as **imagename_01-12.LOD** etc.

Track zero as **imagename_TK0.LOD**

Macros as **imagename.ttl**

Error checks

If your .LOD files hang on sending with the disk create process, stop the macro. Its likely there is a filename mismatch or typo.

Control → Show Macro → End

Check you filenames in the macro. Temporary edit macro with a goto label to the sendfile position once filenames sorted. Save and re open the macro to continue from there.

File lengths (autoSI)

> HIMEM eg. 7FFF ... 'Too Big' **NOTE 1B**

File Xfer and DOS handshake (autoDC)

'Ready' / 'Error'... else timeout / error aborts the macro