SD2IEC & FastLoad – User manual

0. Quickstart guide

1. Format an SD card (max 32GB, 1GB or 2GB cards work best) to FAT32 file system on your PC.

2. Extract SD2IEC_SD_PACK.zip directly to the memory card.

3. Download and copy C64 programs/games to root or organize them in folders.

4. Put the SD card to SD2IEC.

5. Plug the SD2IEC floppy emulator to the expansion port of your C64.

6. Connect the IEC cable to the serial port of your C64.

7. Turn on your C64.

8. Type: LOAD "FB64",8 RETURN
   After the program loaded type: RUN RETURN

9. This should load and run filebrowser. To navigate the menu either use cursor keys or Joystick in port2. For single D64 images, just open the D64 by pressing RETURN or FIRE and then select the first PRG file to LOAD.

1. Introduction

1.1 SD2IEC

SD2IEC is a card reader designed for Commodore computers.

It is compatible with: Commodore 64, C64C, C128, C128D, VIC-20, C16, C116, PLUS4, and SX64.

It supports reading and writing the following file types: *.D64, *.D71, *.D81, *.PRG, and *.P00.

Support is provided for SD cards with capacities of up to 32 GB.

SD2IEC works with:
- Turbo Disk / Fast Load / Speeddisk;
- JiffyDOS;
- Final Cartridge 3 – fastloader/fastsaver;
- DreamLoad;
- Exos;
- GEOS.

1.2 Fastload

A lot of experienced Commodore 1541, SD2iEC, Pi1541 users prefer EPYX FASTLOAD, because of its high compatibility with Commodore hardware and software.

Every moment of your life is valuable, money can't buy time. I am sorry that; this is not a Time Travel Machine, but I hope this will help you to save a few valuable seconds of your life :)

While working with Commodore's original Disk Operating System, Commodore Disk drives (1541, 1571...) or disk drive emulators (SD2iEC, Pi1541...) loading is slow. Epyx Fastload Cartridge increases the loading speed remarkable rate.

Average Loading Speeds Comparison:

Normal C64 Loading: 500 bytes per second

Epyx Fastload (1541): 2500 bytes per second

Epyx Fastload (SD2iEC): 8000 bytes per second

1.3 SD2IEC & FastLoad

SD2iEC (Commodore disk drive emulator) and Epyx Fast Load Cartridge (the most popular "disk fast loader" for Commodore 64). Now they are togetger on one PCB.

Actually, this PCB is a combination of two independent projects, one of them is SD2iEC (Commodore disk drive emulator) and the other is Epyx Fast Load Cartridge. They can be used separately or both together.

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2. Compatibility

It has to be noted that SD2IEC is not fully compatible with the original disk drive.

Original 1541 drives were exceptionally slow and game developers employed various programming tricks and hacks to make the loading process faster.

For example, the processor inside the drive was used to carry out additional calculations.

It is estimated that, as of now, SD2IEC is capable of running over 70% of the games designed for Commodore 64 computers.

3. SD Card Setup

Before using the device for the first time, the SD card has to be formatted in a FAT32 file system,
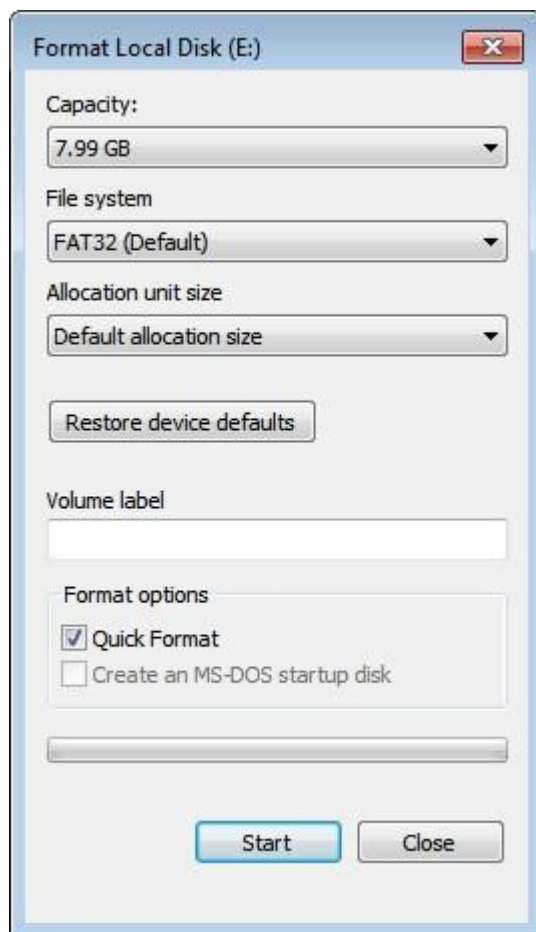
then you can download a program pack for SD2IEC.

SD2IEC_SD_PACK.ZIP

All the files have to be extracted from the ZIP archive directly to the memory card.

Name	Type	Size
c64 games	File folder	
empty d64	File folder	
sid	File folder	
dc64	PRG File	12 KB
fb	File	1 KB
fb16	File	3 KB
fb20	File	2 KB
fb20-3k	File	3 KB
fb20-8k	File	3 KB
fb20-mc	File	3 KB
fb64	File	3 KB
fb64dtv	File	3 KB
fb128	File	3 KB
sd2iec_1.0.0_m644p.bin	BIN File	60 KB
sd2iec_1.0.0_m1284p_LCD.bin	BIN File	124 KB
sid64	PRG File	5 KB

Games and programs can be copied directly to the memory card or organized into folders as one sees fit.

It is not advised, however, to use capital letters in file and folder names.

Using only small letters ensures that the names will be correctly displayed in both display modes.

The *empty d64* folder contains empty D64 images, which are used for disk archiving. These files can be freely copied and renamed.

Name	Type	Size
001	D64 File	171 KB
002	D64 File	171 KB
003	D64 File	171 KB

The *dc64.prg* program allows for transferring files between SD2IEC and the original disk drive.

The *fb*, *fb16*, *fb20*, etc. files are part of the file manager.

The *sd2iec_1.0.0_m644p.bin* and *sd2iec_1.0.0_m1284p_LCD.bin* files contain the current SD2IEC firmware.

These can be deleted from the card after the device is started for the first time.

sid64.prg is a music player that opens SID files.

4. Card Reader Setup

Before SD2IEC can be connected, the drive number has to be set correctly.

This can be done with the blue switch on the back of the device.

To use SD2IEC on its own, the drive number has to be set to 8 .

To use SD2IEC with the original disk drive, SD2IEC can be set as disk drive 9 .

It is important to remember, that some programs and games can only work when loaded from drive number 8.
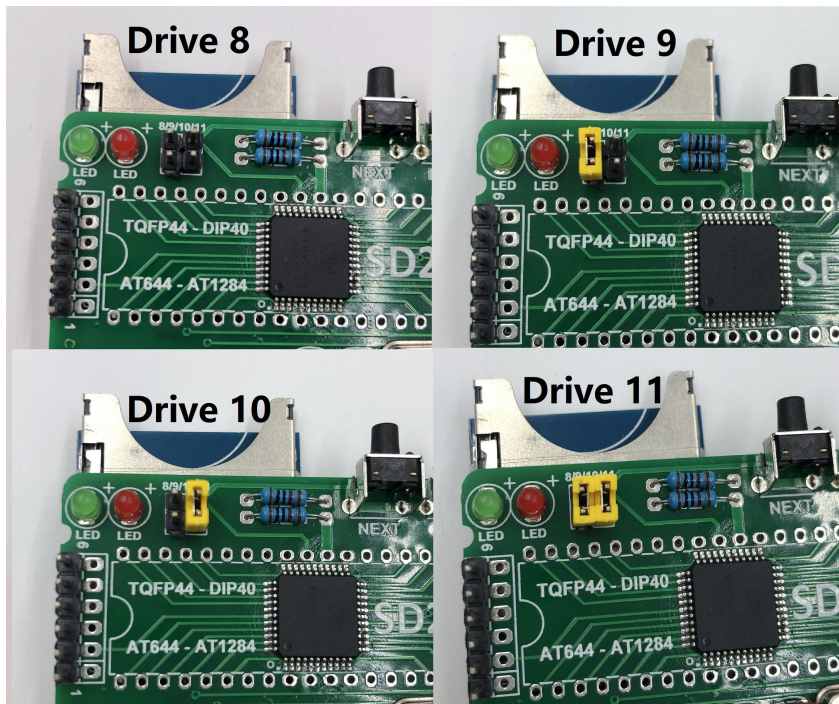
SD2IEC & FastLoad can be powered from the expansion port (only in the case of C64, C128, and VIC-20) or from any USB power source.

The DIN6 cable has to be plugged in to the serial port on the computer and to any port on the back of the SD2IEC.

5. First Run

Once the card has been properly inserted into the reader, the computer can now be started.

In order to protect your electronic devices, always turn off your Commodore 64 before connecting or disconnecting any device.

While transfering data (reading or writing) from SD cards it should not be interrupted like power-off or Reset systems. Otherwise that may damage SD cards.

First, type in the command *LOAD"FB",8* (where 8 is the drive number), then press the RETURN key.

Second, type in the command *RUN*, and again press RETURN.
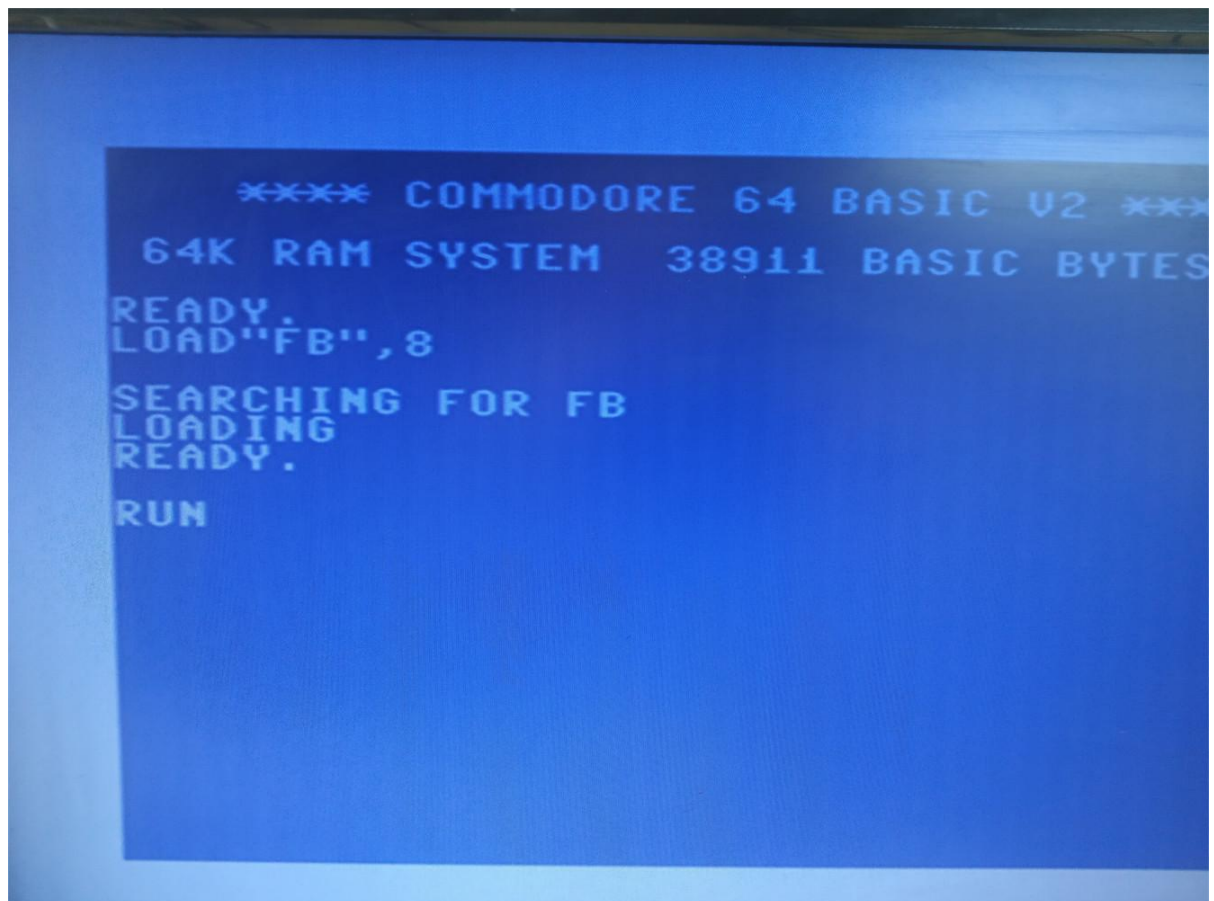
The file manager should automatically detect the model of the computer.

6. Multi-disk Programs

Switching D64 images for multi-disk programs is done with two buttons located on the front of the device.

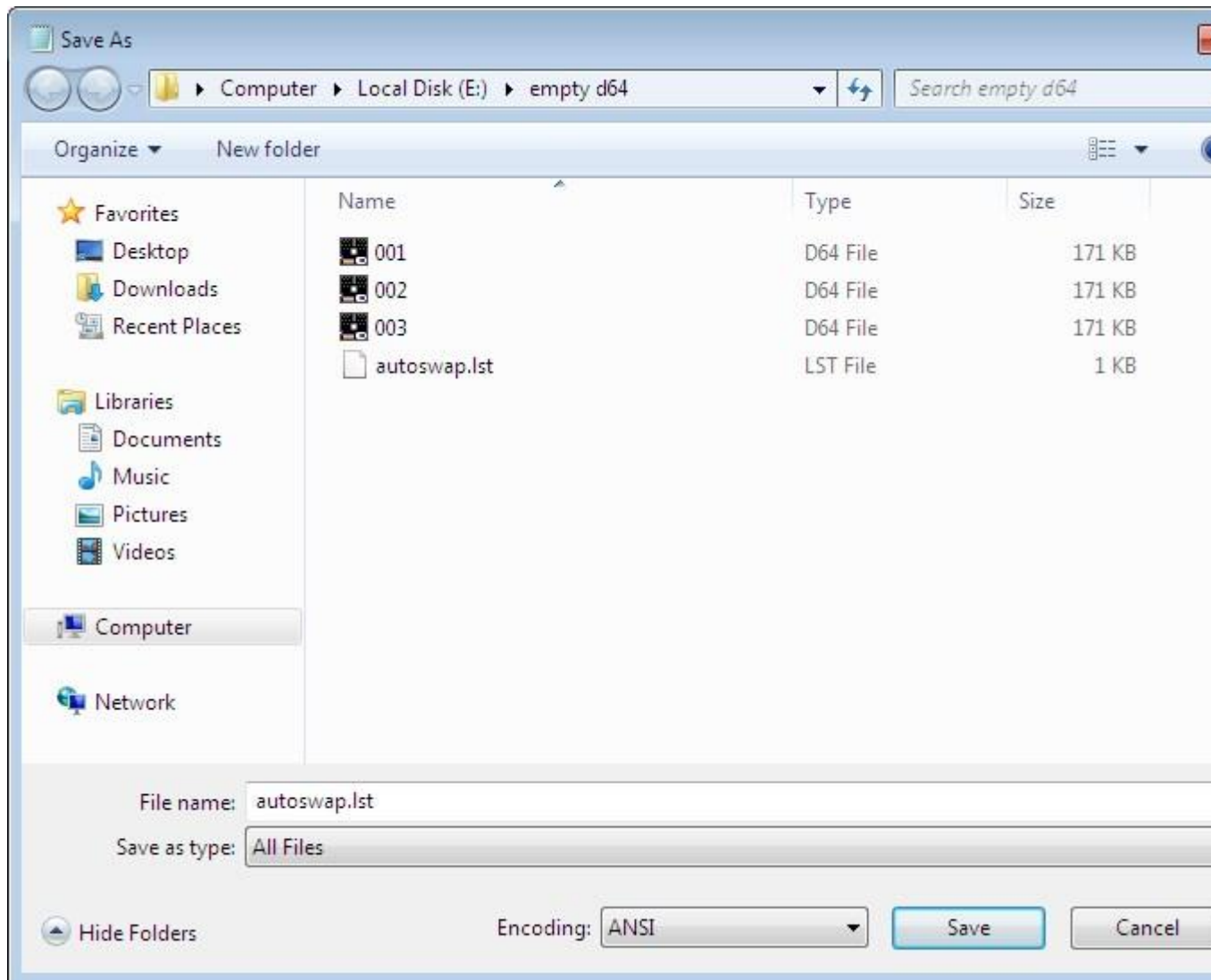For this to be possible, an *AUTOSWAP.LST* file has to be created in the same folder that contains D64 images.

This can be done with the use of Notepad program.

D64 filenames have to be typed in one under another.
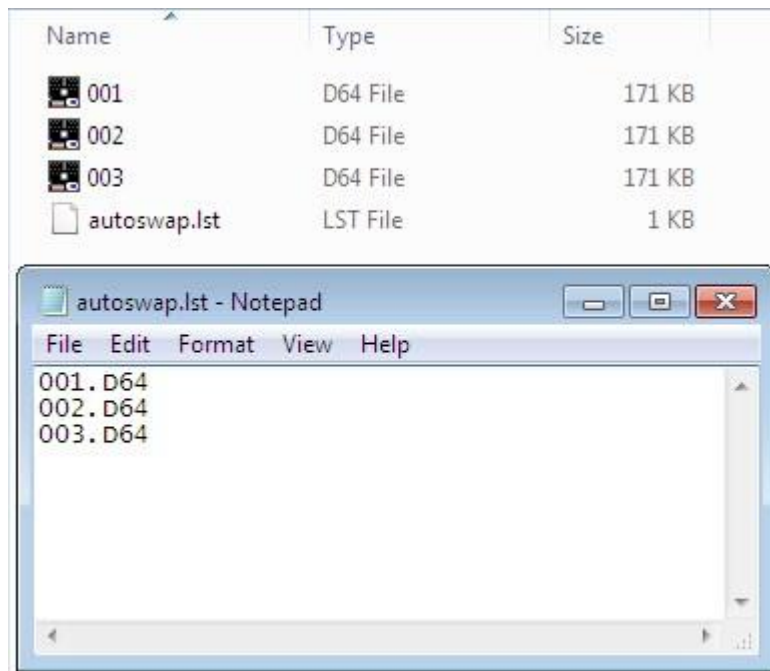
The file has to be saved as *AUTOSWAP.LST*, and not *AUTOSWAP.LST.TXT*.

To do this, when saving the file, the Save as type: All Files option has to be selected.

The program has to be started from the first disk, and, if needed, the D64 images can be switched around with the use of buttons.
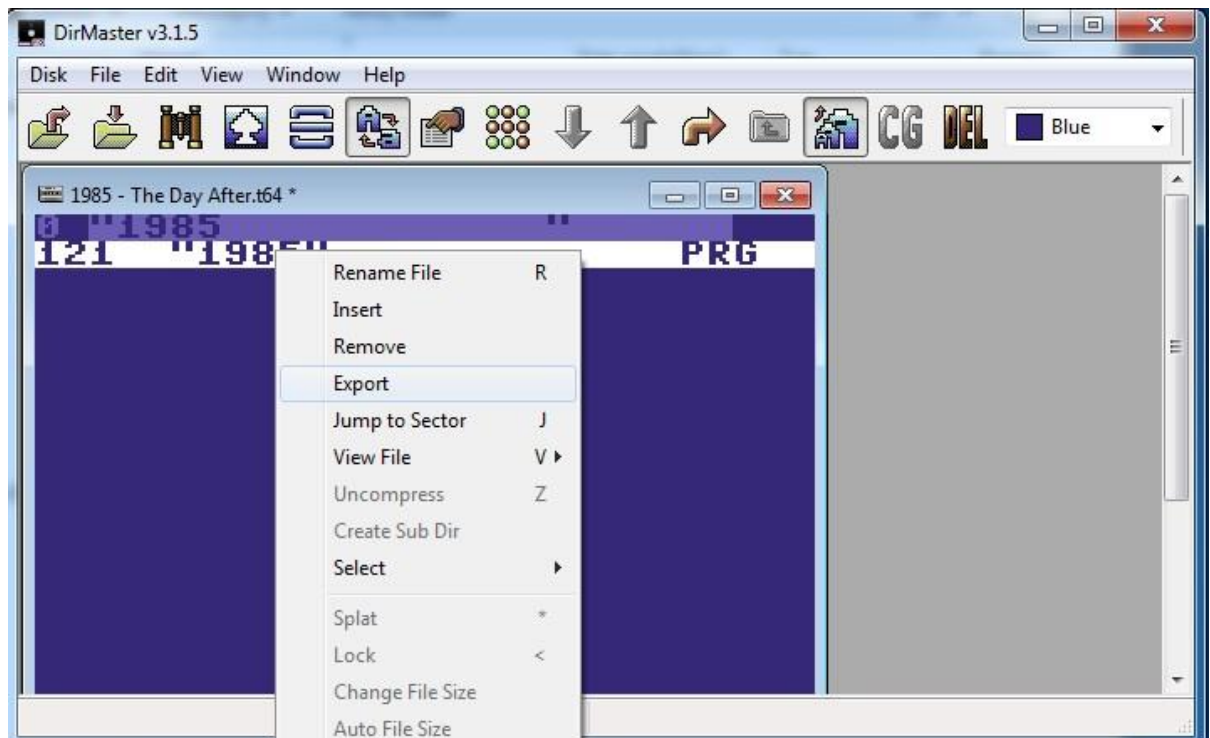
7. T64 Files

SD2IEC does not support T64 files. Instead, it provides support for PRG files, which can be extracted from T64 files.

DirMaster, which is available at:

https://style64.org/dirmaster

can be used for this purpose.

Once installed, open the T64 file you want to work on, right-click on the line that shows the correct PRG file, and then left-click on *Export*.

Now, the PRG file can be saved and copied onto the memory card.

8. Software Archiving

When it comes to copying software from cassettes or single PRG files from disks, the process is very simple.

First, you need to load the file into the computer memory, and then use command *SAVE"filename.prg",8* (where 8 is the SD2IEC drive number) to save the file onto the memory card.

To be able to use a Commodore Datasette and a SD2IEC simultaneously, the reader has to be powered by a USB power source.
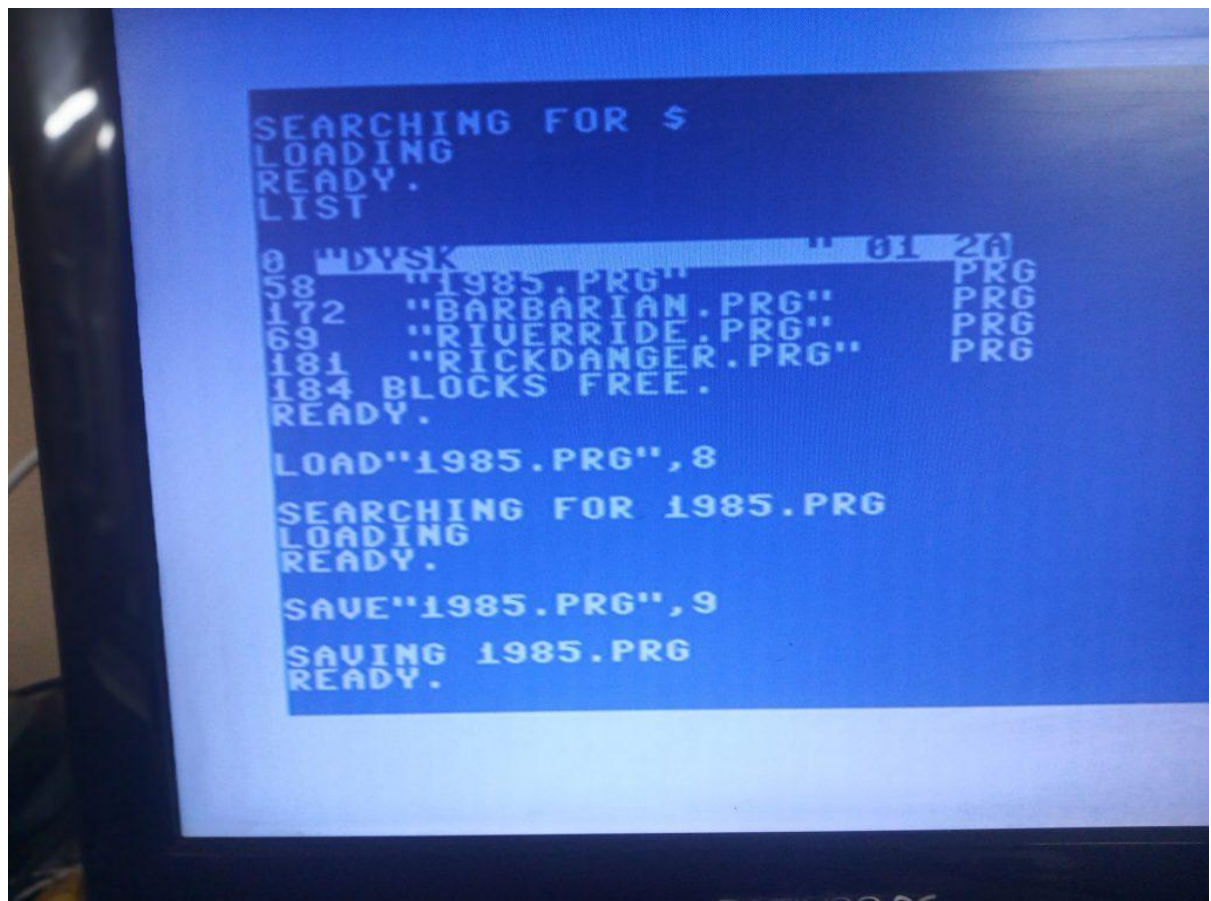
The picture above shows a game that has been loaded from disk drive number 8 to the computer memory, which was subsequently saved to a SD2IEC set as drive number 9.

To archive the entire disk, an empty D64 image from the *empty d64* folder has to be used.

Copy any one of the images to a folder of your choosing and rename it (for example, to the name of the game).
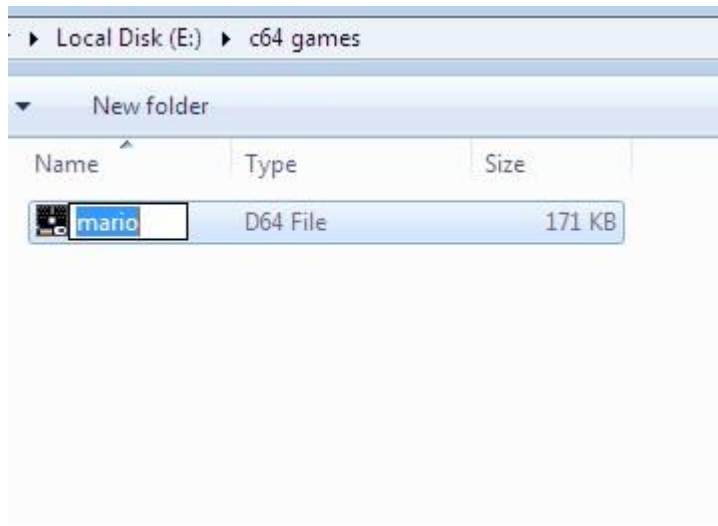
Then, insert the card to the SD2IEC and load the *DC64.PRG* program.
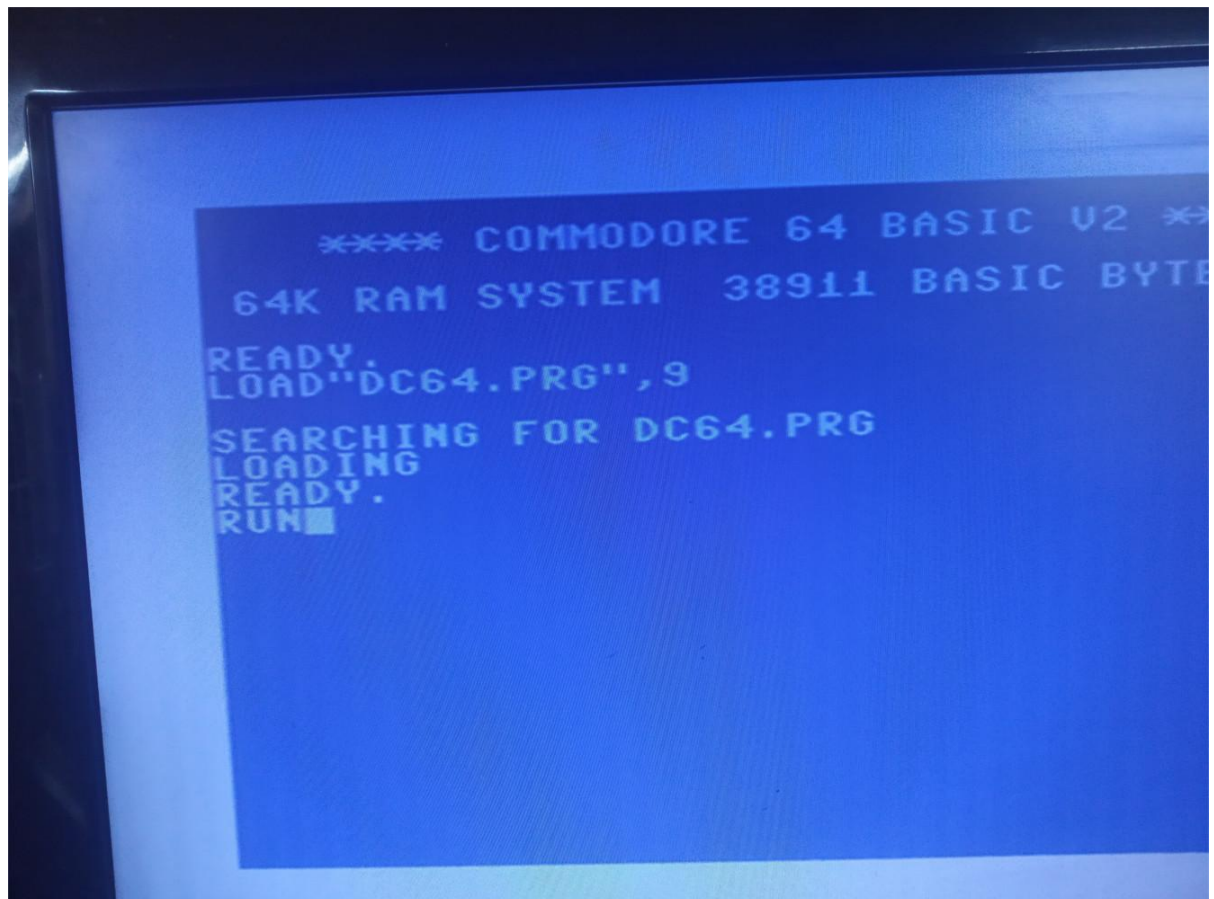
Once the program has been started, the contents of both drives are shown, together with a description of the available options on the right.
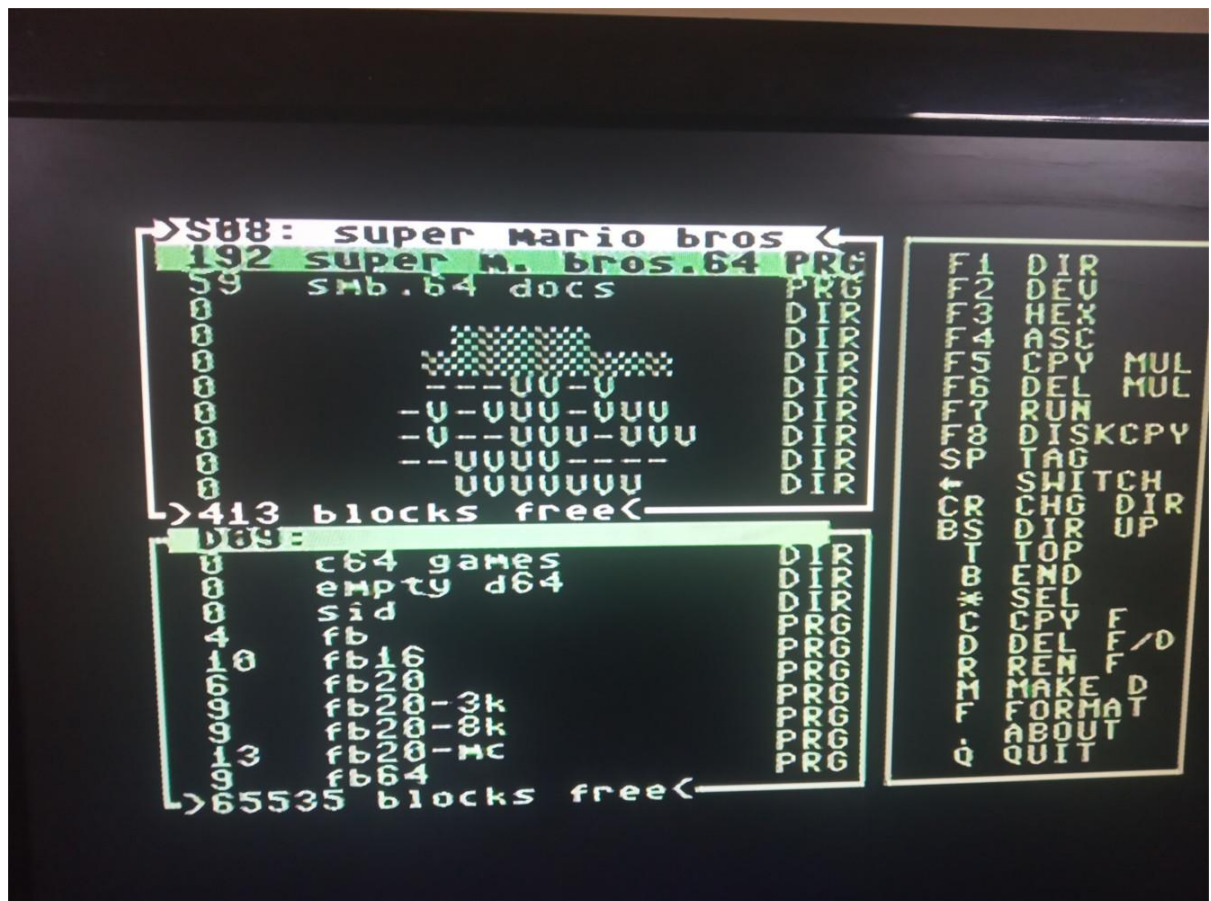
The leftward arrow key allows for switching between drives 8 and 9.

This function is labeled as SWITCH. The arrow key is located near the 1 key.

Drive number 9 is now highlighted in white.

Next open your empty D64 file.

IMPORTANT!

Now, it is **necessary** to once again use the arrow key to switch to the other disk drive.

The program copies files from the drive highlighted in white to the drive without highlighting.
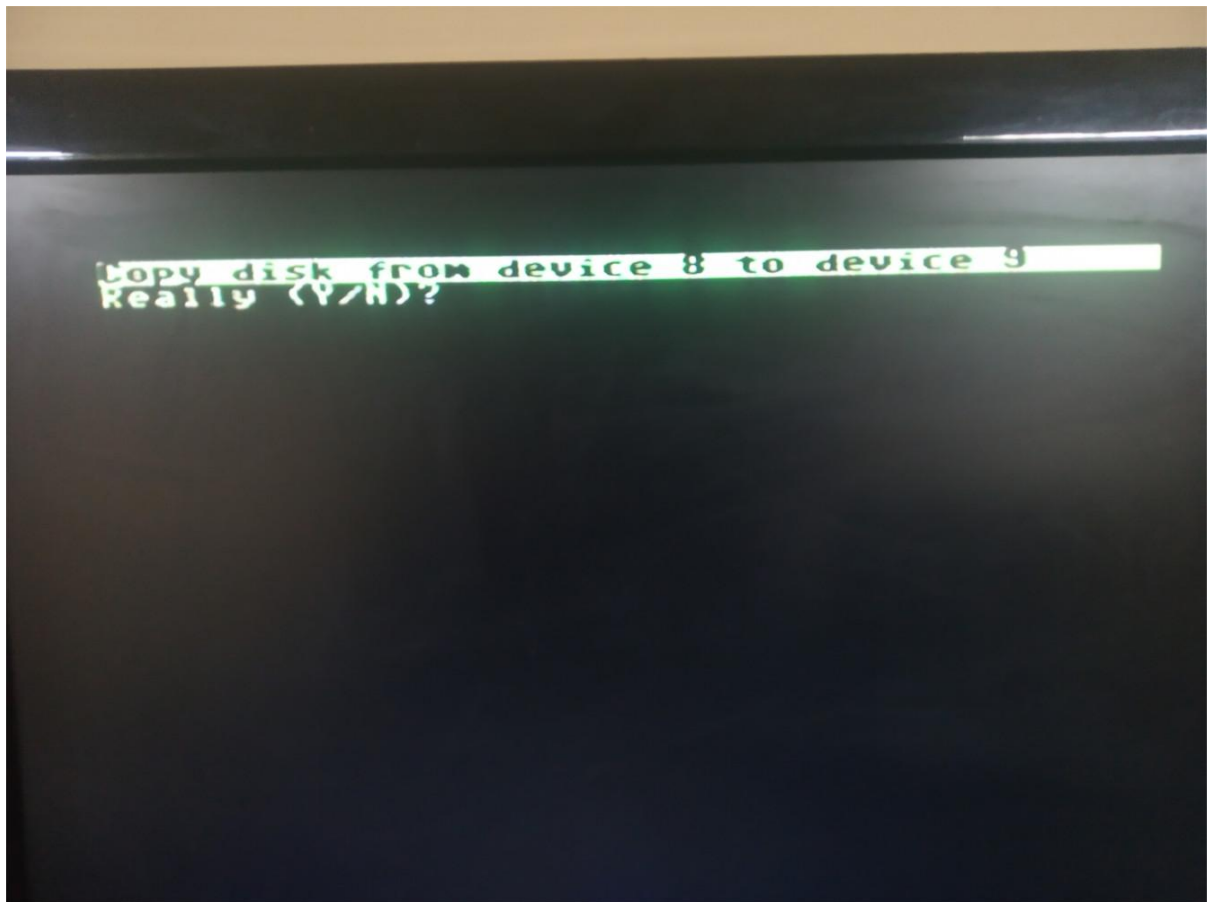
If this step is skipped, all data present on the disk will be erased.

Drive number 8 is now highlighted in white.

To start the process of copying, press the F8 key (SHIFT + F7).

A notification with drive numbers will be displayed.

By pressing the Y key, you confirm your decision and the process of copying is then started.

This usually takes about a dozen or so minutes.

```
Copying from drive 8 to 9        t:1 s:15
    000000000011111111112222222222333333
S   123456780123456780123456780123456780
00W
01W
02W
03W
04W
05W
06W
07W
08W
09W
10W
11W
12W
13W
14W
15R
16
17
18
19
20
```