What is wDrive?

It is a 5.25" floppy drive emulator for apple disk ii. In the past, most of the commercial diskettes were protected. They are difficult to duplicate. Although many of them were cracked and their images can be used by floppy disk emulators now a day, protected diskettes still exist and many of them were imaged. We can found many protected diskette images in woz, edd and nib format.

The main aim of develop this device is to support protected disk images.

Background

Start from support nib which is the most easy format to implement in the emulator. Of course, this format only preserve little characteristic of diskette, even the sync bytes were lost. Only light copy protected image can use by the emulator. To step forward, we developed edf format which is converted from edd and inherited features of edd format. Use this format, many protect schemes can be supported by this emulator. Until woz was introduced, it preserve more diskette's characteristics than edd (not sure if it preserve all diskette's characteristics), we are very close to the target.

Specification

- Support apple ii 5.25" floppy disk image format in nib, edf and woz.
- Support SD, SDHC and SDXC memory card.
- File format use Fat16/Fat32.

Limitations

- Maximum files in each folder limited to 100.
- Maximum levels of sub folder limited to 10.
- Not support quarter track.

When copy to .nib file use disk copy, the copy program will rewrite the entire track. After copy, the sync bytes are reserved which is not the same as the standard .nib file. In this case other apple emulators or floppy emulators may not able to recognize this file.

Write to woz file will not alter the meta data. As the meta data carry the checksum, the image after write may not use by other system unless it was patched to fix the checksum or the system does not care about the checksum like wDrive.

Write operation is timing critical. The write speed of the SD card greatly affect the success of write to disk. It is better to verify the disk use disk tools. For copy disk case, just copy the bad sector/track again.
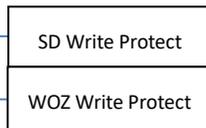
Operation

1. Connect wdrive with disk II interface.
2. Insert SD card stored woz files.
3. Turn on apple, supported images will list on the screen. If there is error, press reset key to see if it can be fixed. If can't, check if there is bad contact in the SD card. Otherwise, wdrive cannot support this SD card.
4. Select the desired image use Up/ Down key and confirm selection by press Select key. Track number will show at the right side of the line.
5. To eject the disk, simply press down key once and choose other disk image as in step 4.
6. If encountered problem, press the reset key to reset wdrive.

Write Protect

SD Write Protect

WOZ Write Protect

wDrive v0.43

Airheart.woz
Alien Ambush.woz
Arkh.woz   00
Apple Cider Spider.woz
Apple Galaxian.woz
Aquatron.woz

wDrive emulate write protect by means of the SD card write protect switch. When the switch was enabled, the drive is in write protect mode. There is an asterisk shown in the upper right conner to indicate that the drive is in write protect mode. As there is a write protect flag in woz file, wDrive also support this software write protect. When this flag set, the drive is also in write protect mode even though the SD card write protect switch was disabled.

Update Firmware

wDrive Loader

Release Key...

1. Prepare a SD card loaded with the firmware file(wdrive.bin) in root directory.
2. Press and hold both left and select key, then reset wDrive by push the reset button.
3. After reset, the wDrive's screen shows "Release key....". Then release the keys and wDrive start update the firmware and reboot.