SSD Formatting and Writing with the CSB502SSD

If you are planning to use an SSD partition for the root filesystem: Please see "Using the SSD as root file system for Raspbian" and complete those instructions before adding any files.

Formatting a new SSD from the Raspberry Pi:

<p align="center">CAUTION: this will remove all data on the drive: CAUTION</p>

There are a number of ways to format a raw SSD from the Linux command line. Here is one way that will make the entire disk one ext4 partition. If you followed directions for "Using the SSD as root file system for Raspbian", you can skip this step, your drive is already formatted. These commands are taken from the Adafruit-Pi-ExternalRoot-Helper script. We are using /dev/sda as the target drive here. It is safer to try this with no other USB flashdrives or other drives plugged into the system.

```
sudo parted --script /dev/sda mklabel gpt

sudo parted --script --align optimal /dev/sda mkpart primary ext4 0% 100%

sudo mkfs -t ext4 -L rootfs /dev/sda1
```

Now you will have an ext4 partition at /dev/sda1 which spans the whole SSD.

Mounting the New Drive:

The new partition can be mounted in the usual way:

```
sudo mount /dev/sda1 /media
```

While the drive is mounted, read or write files in the /media directory to use the hard drive =)

Data may not be completely written until syncing with the `sync` command or unmounting with the following:

```
sudo umount /dev/sda1
```

If you are using the desktop on the Raspberry Pi, it is likely that the drive will be mounted automatically.

Using the CSB502SSD with a non-Raspberry PI host (ie attaching to a desktop machine)

Since we designed the CSB502SSD with its own power supply and the ability to power the Pi, it is a self-powered device rather than a bus powered device. You can plug it into any other machine with a USB Host port to transfer files, but the CSB502SSD must be powered via the external power supply (wall power).

Copying files from a Linux Laptop/Desktop

Do this as you would with any other USB drive, but make sure the CSB502SSD is wall powered.

Copying files from a Windows Laptop/Desktop

Windows does not natively read/write the ext4 filesystem favored by Linux. Rather than format the drive as NTFS, which we believe will slow down performance, we suggest formatting the disk on the Pi with the commands in the first section of this document and then using an ext4 filesystem driver for Windows.

We have tested a few of these drivers and the best seems to be ex2fsd http://sourceforge.net/projects/ext2fsd/. Recently, this project has started supporting writing/reading ext4 filesystems, which is exactly what we need. This is external software and not officially supported by Pi2Design. There is however one thing that is worth mentioning.

The drive must be ejected properly to ensure that the filesystem does not get corrupted. On Windows, the eject command is missing from the right click menu for the drive. To eject, find the usb icon on the taskbar, right click and select "Eject mass storage device".