Tutorial – How to upgrade firmware on Phison S8 controller MyDigitalSSD using a Windows PE environment

Version 2.0

This tutorial will walk you through how to create a bootable USB drive to enter into a WINPE environment and how to apply the newest firmware S8FM07.7 to your Phison S8 controlled MyDigitalSSD.

- WARNING -

THIS FIRMWARE UPGRADE WILL ERASE YOUR SSD
MAKE SURE TO BACK UP ALL IMPORTANT INFORMATION

Checklist:

USB Drive, PC that supports mSATA / M2 NGFF or the mSATA-to-SATA / M2 NGFF-to-SATA adapter in AHCI mode, and a MyDigitalSSD drive featuring the S8 controller (Bullet Proof 4 (BP4), Bullet Proof 4 Eco (BP4e)) pictured here:


Step 1. Downloading the files you'll need.

My Digital Discount has included everything you need in 1 download located in the link below.

Link: http://www.mydigitaldiscount.com/downloads/S8_77_WPE.zip

Extracting:

1. Download the file located at the link above. (Total size: 128MB)

2. Open the file using WinZIP, WinRAR, or most versions of Windows 7 will simply open the file in a folder.

3. Create a new folder on your current desktop. Rename the folder 'Boot Disk.'

4. Highlight all the files in the ZIP file and drag them to your 'Boot Disk' folder you just created on your desktop. *You may close the ZIP program.*

5. If you open your new folder 'Boot Disk' you should see the following files:
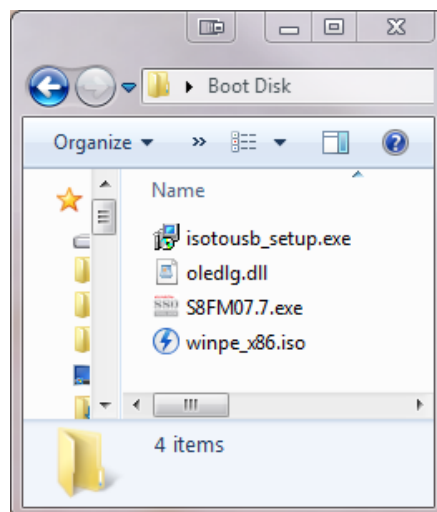
Step 2. Creating a WinPE USB drive with ISOtoUSB to install the firmware update.

BEFORE STEP 2: The user must make sure the computer they are using to do this upgrade can boot from the USB port. Most new computers will have this feature. See Step 4-B

Step 2-1. Install ISO to USB Software:

a. The first file in the 'Boot Disk' Folder we created is a freeware program that allows you to use an image on a USB drive. Install the program with the file name 'isotousb_setup.exe.' This process should take less than one minute.

b. The new icon for this program should look like this on your desktop:

c. Make sure you have a blank USB drive inserted into your computer and open the ISO to USB program. The program should look like this:
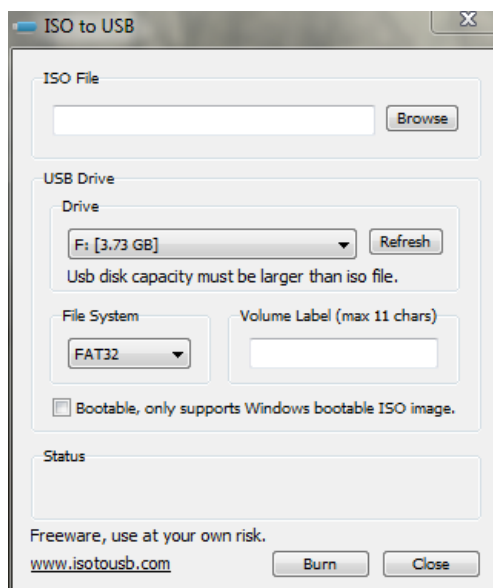

d. Under 'ISO File' on the ISOtoUSB program, click the 'Browse' button and navigate to the 'winpe_x86.iso' located in the 'Boot Disk' folder you placed on your desktop.
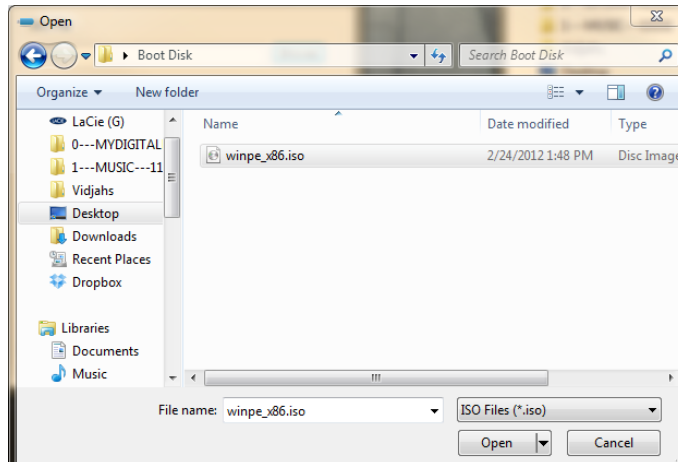
e. Make sure that under the 'USB Drive' section of the ISOtoUSB program you have chosen the designated USB drive you would like to reformat.

   NOTE: This program will erase the USB drive.

f. Finally, make sure the 'Bootable, only supports Windows bootable ISO image.' And you are ready to press the 'Burn' button. The program should look like this:
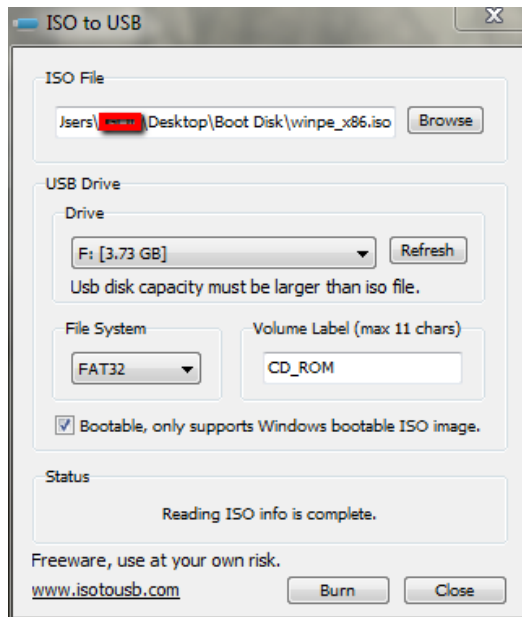
g. Click OK to the WARNING that is informing you the USB drive will be erased:
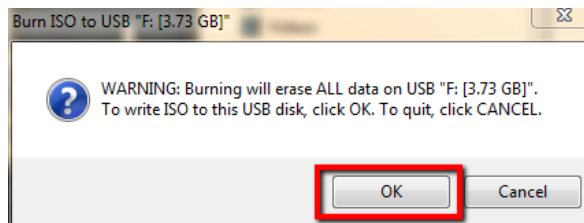
h. The program does not have a progress bar, but it took less than twenty seconds for the 4GB USB drive used in this test. When the program completes you will get the following message:
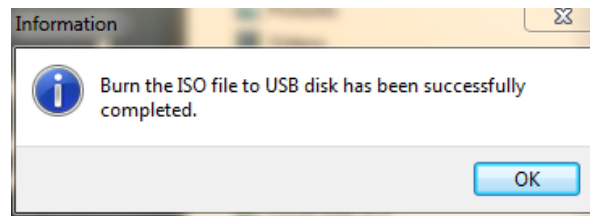
Step 3. Putting the necessary files on the new boot drive.

a. Open the 'Boot Disk' folder from your desktop, and also open the boot drive you just created. Highlight, drag and drop the following files onto the root (main) folder of the new USB drive you created. When you are done your USB drive should have the following files on it:
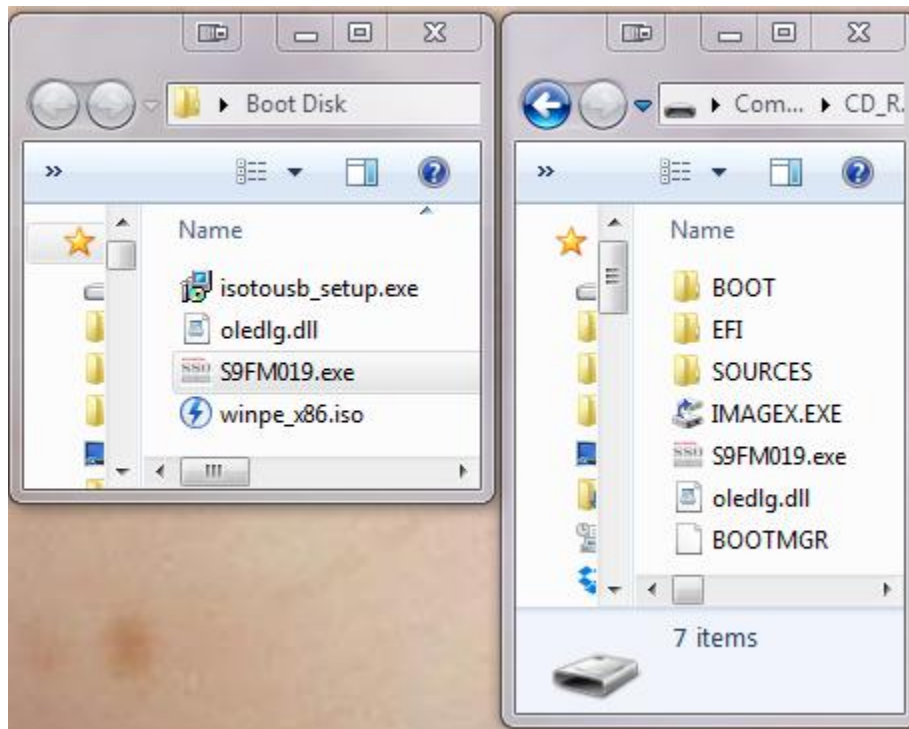
b. Your boot disk is now officially complete.

Step 4. Making sure your BIOS is set up correctly on your computer.

a. **Making sure the computer is in AHCI (Enhanced mode), not IDE or Compatibility Mode.**

    i. Turn your computer on and enter into the BIOS. This is different depending on your computer, but the most common key triggers to get you into the BIOS are 'delete', 'F2', or 'F12.' The opening screen should tell you how to enter setup; if it does not, and none of the keys work, you may need to contact the laptop manufacturer or consult the notebook manual for this information.

ii.   Because all manufacturers use different BIOS, this may be difficult to find. Search around the BIOS for something that states some variation of 'SATA operation mode,' or IDE configuration. The choices should be IDE, RAID, or AHCI. On most new computers it should be running on AHCI already. If your BIOS DOES NOT HAVE this option, there is a good chance your computer runs exclusively on IDE, and you will not be able to upgrade this SSD. You will need to find a computer that does operate in AHCI mode.

iii.   After making sure the computer is running in AHCI mode, Save and Exit the BIOS.

b. Changing from UEFI to Legacy Boot mode:

I.   In newer PCs and notebooks, you may not be able to change the boot order because the BIOS boot mode runs in UEFI. For the purpose of this tutorial, these are the steps for changing from UEFI to Legacy boot on a Y510p. *Remember the default settings because you will want to change them back after this process.*
       a.   Enter the BIOS with F2 during startup
       b.   Arrow over to 'Boot'
       c.   Change the boot mode to 'Legacy Support'
       d.   Press 'F10' to Save and Exit

c. Making sure your computer can boot from the USB drive:

I.   Shut down your computer. Plug in the thumb drive.

II.   The easiest way would be if your computer gives you a choice to do a 'One Time Boot' when you first turn on your computer before it starts to boot into Windows. It should say some variation of 'Press <F11> to load boot menu.' Unfortunately there is no universal default key that will bring up this menu, it will be different on most computers, and you may want to contact the laptop manufacturer or consult the notebook manual for this information. If your computer has this capability, you may skip direct to 'Step 5.'

III.   Turn your computer on and enter into the BIOS. This is different depending on your computer, but the most common key triggers to get you into the BIOS are 'delete', 'F2', or 'F12.' The opening screen should tell you how to enter setup; if it does not, and none of the keys work, you may need to contact the laptop manufacturer or consult the notebook manual for this information.

IV.   In most BIOS' you will see a tab that indicates 'Boot' 'Boot Sequence' or 'Boot Device Priority'
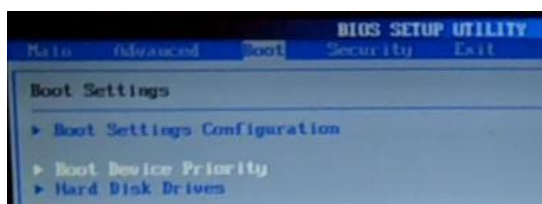

V.   Make sure the first boot device is the USB drive. After saving this you may restart the computer. NOTE: The USB drive must be plugged in before entering the BIOS to be able to choose this option.

Step 5. Applying the firmware update:

***NOTE:** In all initial tests, during a simple Upgrade Firmware process the data remained intact; however it is always recommended to back up all data before proceeding. However using the Over-Provisioning option will ALWAYS wipe the drive clean.*

a. Now when you turn on the computer you should be presented with an MS-DOS prompt screen inside WINPE:

NOTE: There have been some reports that the keyboard and mouse on some Chromebooks will not work in WINPE, simply install a USB keyboard and mouse if this is the case. ***
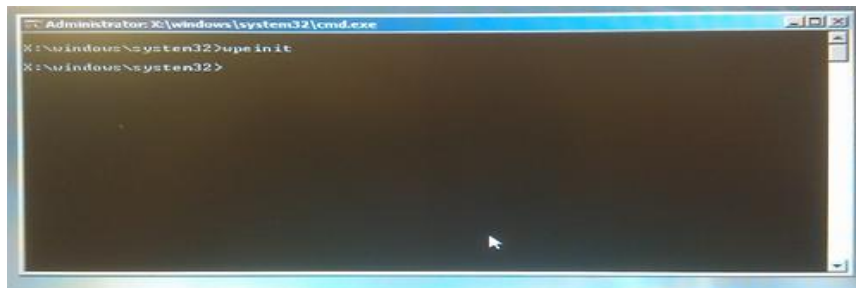
b. Now that we are in the WINPE environment, we need to copy the files from the USB drive onto the initial directory presented which is 'X:\windows\system32'

1. Before we can do that, we first need to locate the USB drive letter. The only way to do this is to troubleshoot and test by typing in the most common USB drive letters and finding out what is on the drive by typing the following commands. I suggest starting with C:

   i. Type without quotes: "**C:**"

   ii. Type without quotes: "**dir**"

2. The command 'dir' will give you a list of what files and folders are located on the drive. As you can see from the following screenshot:

i. The drive C: does not have the files I need, so I move onto drive letter 'D:' Repeat this process until you see the following:

ii. Highlighted in red are the files we need.

3. Now that we have located the correct files we need to navigate back to the initial directory of 'X:\windows\system32'

i. To do this, Type without quotes: "**X:**"

4. Now we copy the files by typing the following commands:

i. Type without quotes: "**copy e:S8FM07.7.exe**"

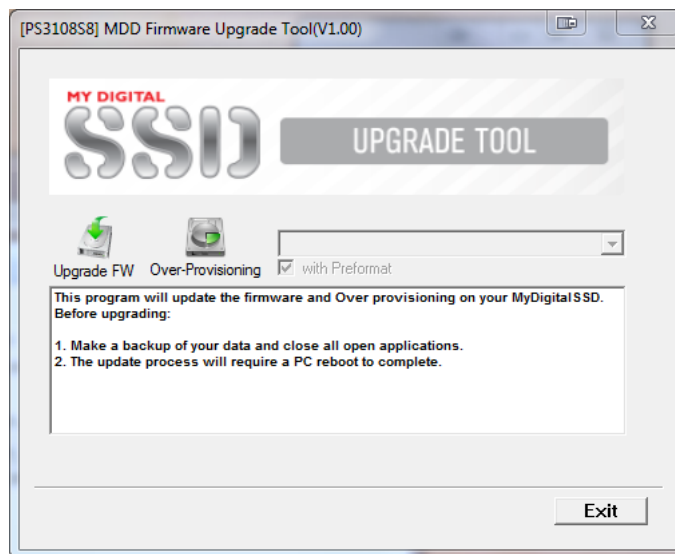ii. Type without quotes: "**copy e:oledlg.dll**"

NOTE: replace "e" with the letter you found to be your USB drive.

c. Start the program:

1. Type without quotes: "**S8FM07.7.exe**" :

2. This will bring up the following program:
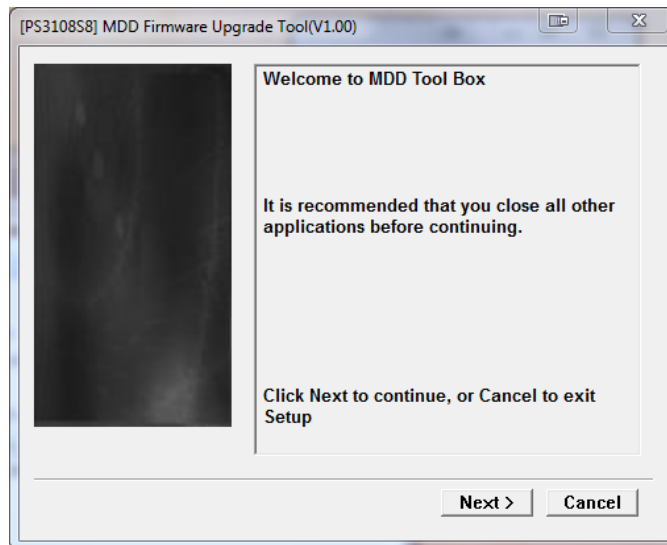
3. Press the 'Next >' button. This will bring up the main upgrade tool:

4. There are 2 courses of action for the next step.

 1. A simple firmware upgrade:

  a. This WILL ERASE your drive, and will simply upgrade the firmware, NOTE: If your drive is already over provisioned, this is your only choice. Remember to back up your information.

 2. Over-Provision and upgrade the firmware:

  a. This WILL ERASE the drive also, and it will allocate a small percentage of the SSD to help the drive perform faster and last longer. (128GB (119GB) will become 120GB(111GB))

<blockquote>

b. This is recommended (But not mandatory) for people using the drive as their System C: drive.

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ii. Press the 'Upgrade FW' button or the 'Over-Provisioning':
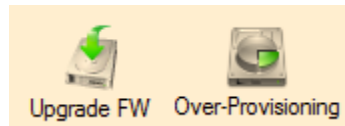

iii. Doing this will allow you to use the pull down menu on the right side of the program, when clicking on this, you should see your SSD.
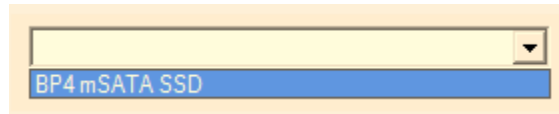
iv. Select it and the SSD information should be displayed.

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5. If only upgrading the firmware, the process should not take any longer than 20-40 seconds.

6. If Over-Provisioning, the process should take 40-80 seconds.

7. During the update process, there is no progress bar or anything, wait patiently.

8. If all was done correctly you should see this screen.
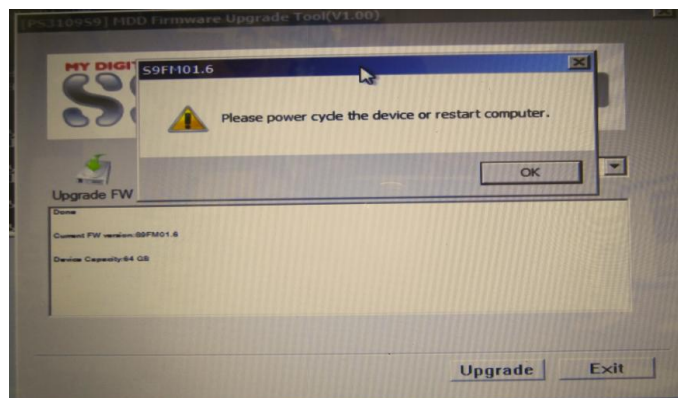
9. Press the 'OK' button, and then press the Exit button.

10. Type 'WPEUTIL SHUTDOWN' into the dos prompt to shut down the computer completely. Wait 5-10 seconds and then turn the computer back on. *NOTE: A full shut down after the upgrade process is necessary, a restart will likely not allow for the upgrade to complete successfully.*

Step 6. Finished, proceed to either boot from the SSD again or to reload your OS.