Tutorial – How to upgrade firmware on Phison S5 controller MyDigitalSSD

Version 1.3

This tutorial will walk you through how to create a bootable USB drive and how to apply the newest firmware S5FAM030 to your Phison S5 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 or the mSATA-to-SATA adapter, a PC that supports IDE mode or Compatibility mode, and a MyDigitalSSD drive featuring the S5 controller, 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/S5FAM030_FW.zip

Extracting:

1) Download the file located at the link above. (Total size: 2.9MB)

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:
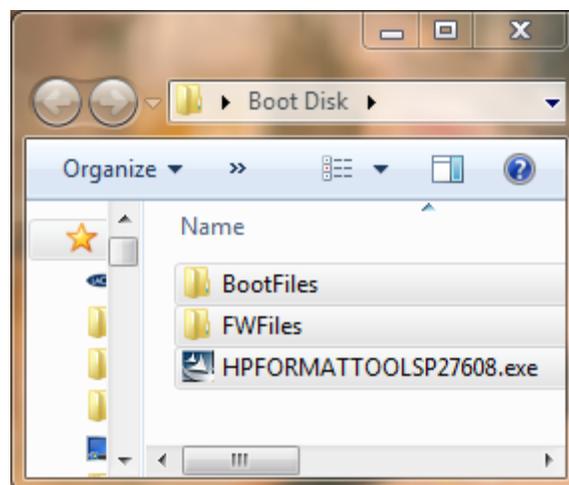
## Step 2) Creating a MS-DOS USB drive with HP Format Tool to install the firmware update.

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) HP Format Tool Software:

a) The only program in the root of the 'Boot Disk' Folder we created is a freeware program that allows you to create a bootable MS-DOS USB flash drive. Install the program with the file name 'HPFORMATTOOLSP27608.exe' by double clicking on it. This process should take less than one minute.

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

c) Insert a blank USB drive into your computer and open the HP Format Tool program. The program should look like this:
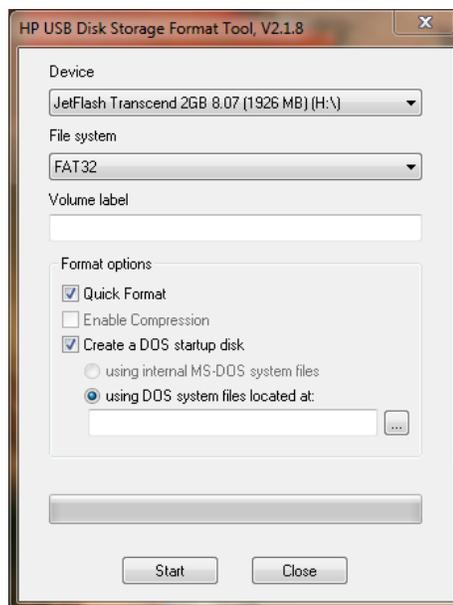

d) The 'Device' should be set to the blank USB drive, everything else should be exactly the same as I have it above. Set to FAT32, 'Quick Format' and 'Create a DOS startup disk' should both be checked.

e) Next we need to use the 'BootFiles' located in our 'Boot Disk' folder we created on the desktop, click on the '...' button on the HP Format Tool program pictured below.
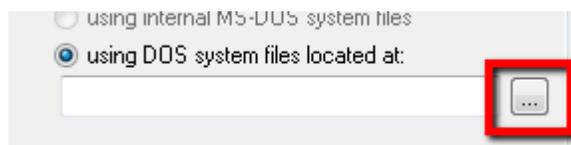
f) This will bring up the following screen:
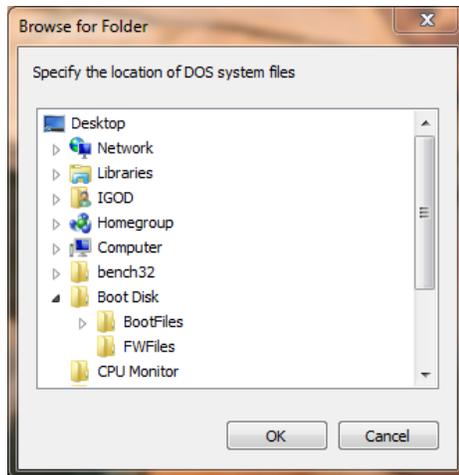
g) Navigate to the 'Boot Disk' folder on your desktop and single click on the 'BootFiles' folder to select it, and press the 'OK' button.

h) Press the 'Start' button on the HP Format Tool.

i) You will now get a warning indicating all the information will be erased. Say 'Yes.'

j) Depending on the size of the USB Drive it should only take 5-10 seconds to complete, the 2GB USB drive used for this demonstration formatted in 5 seconds and displayed the following screen.
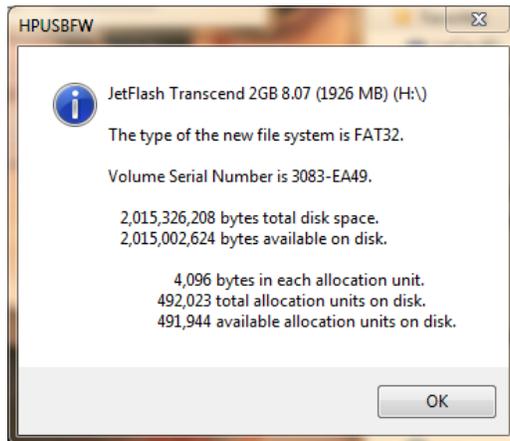
k) Click 'OK.'

l) Click the 'Close' button on the HP Format Tool and you now have a MS-DOS boot disk.

Step 3) Putting the necessary files on the new boot drive.

a) Open the 'Boot Disk' folder from your desktop and navigate inside the 'FWFiles' folder. Also open the boot drive you just created. Highlight, drag and drop all the 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:
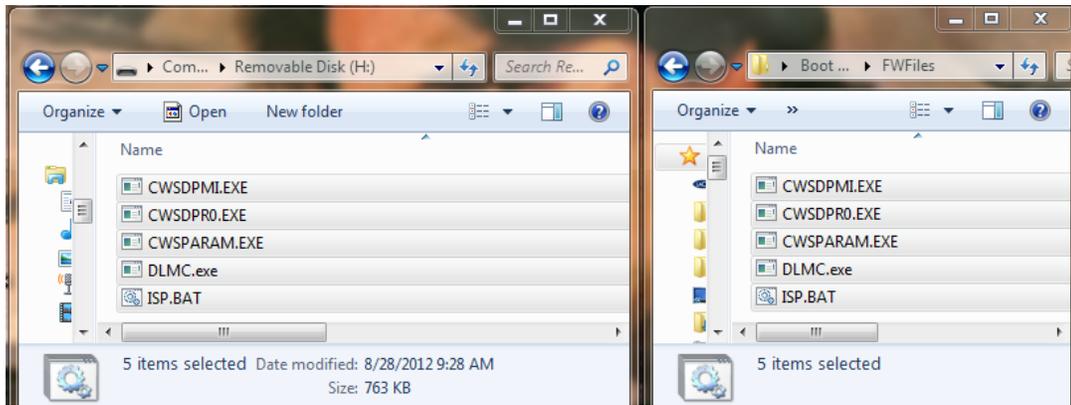
b) Your boot disk is now officially complete.

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

a) Making sure the computer is in IDE 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, AHCI, or even Compatibility Mode. On most new computers it should be running on AHCI. If your BIOS DOES NOT HAVE this option, there is a good chance your computer runs exclusively on IDE, and you will be able to upgrade this SSD without a problem. If you find this option, however 'IDE' is not one of the choices, You will need to find a computer that can operate in IDE mode. Note: Compatibility Mode also will not work.

III. After making sure the computer is running in IDE mode, Save and Exit the BIOS.

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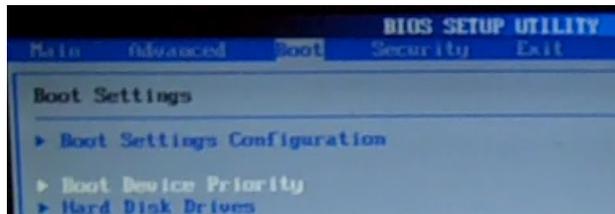
V.   Make sure the first boot device is the USB drive. After saving this you may restart the computer. NOTE: The USB drive must be plugged in before entering the BIOS to be able to choose this option.

Step 5) Applying the firmware update:

NOTE: THIS WILL ERASE YOUR DRIVE. BACK UP ALL IMPORTANT INFORMATION BEFORE PERFORMING THIS TASK

1) Make sure your computer is shut down completely.

2) To avoid additional steps and errors, remove all other hard drives and solid state disks except the MyDigitalSSD Phison S5 controlled drive.

3) Insert the bootable USB drive we created into a USB slot and boot from it. All computers will have different interfaces, but these are what the boot screens look like on the two computers I was able to upgrade the firmware on. (Dell Dimension 5150 Desktop and Compaq Presario CQ60)
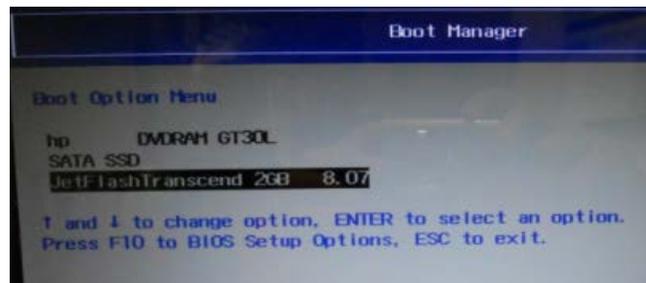
4) This tutorial will continue on the Dell Dimension 5150 Desktop. F12 was the quick key for this specific desktop in order to get to the screen above.

5) Choose the USB drive and within 2-5 seconds you should see an MS-DOS prompt like the one pictured here:
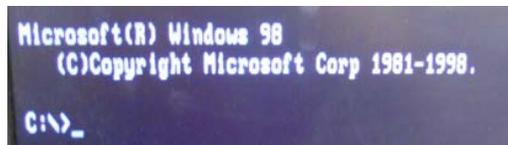
6) Simply type in without quotes 'ISP' as pictured here:

7) The computer will think for 30-60 seconds, pictured below:

PHISON SATA PS3105 DOS Firmware Upgrade Tool v1.02(Mar 23 2012 18:35:04)
Start scan device... i

AMMENDMENT - *Thank you to Steven!*

If you are unable to switch the PC to IDE, you can use Compatibility mode. Follow the steps above, however this time it will state something like the following:

PHISON SATA PS3105 DOS Firmware Upgrade Tool v1.0
Primary Master : FW:Ver7.02a ,Model:SATA SSD
                  Address:496(0x1f0)Master
Primary Slave   : FW:S5FAM017 ,Model:SATA SSD
                  Address:496(0x1f0)Slave
No vaild SATA Device Exist !!

C:\>_

In the screen above you see 2 different variables, one is the address, or for the purpose of this tutorial the variable above similar to without quotes '0x1f0' The second variable will be the role the SSD is in, either master or slave. Type the following dependent on the configuration of these two variables on your screen. For mine it is without quotes 'DLMC 0x1f0 –slave.'

C:\>dlmc 0x1f0 –slave_

If performed correctly, you will see the example in #8 below.

8) If the scan is successful, the next prompt should look like this:
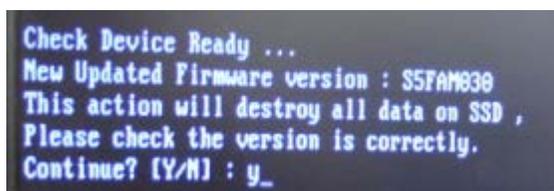
Check Device Ready ...
New Updated Firmware version : S5FAM030
This action will destroy all data on SSD ,
Please check the version is correctly.
Continue? [Y/N] : y_

9) Read the text carefully and type without quotes 'Y' and the firmware upgrade will begin. (NOTE: The most common problem for the program to fail is that the computer is either not set on IDE mode or is not capable of accessing IDE mode. In which case you may need to find another computer to perform the upgrade on.)

10) The program again should take 30-60 seconds, and if all is well, the final screen should be displayed as follows:
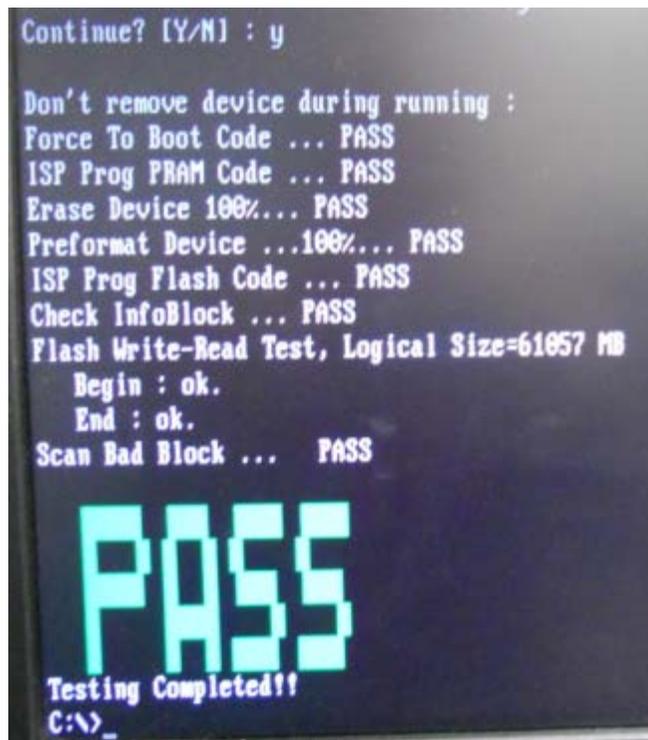

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Continue? [Y/N] : y

Don't remove device during running :
Force To Boot Code ... PASS
ISP Prog PRAM Code ... PASS
Erase Device 100%... PASS
Preformat Device ...100%... PASS
ISP Prog Flash Code ... PASS
Check InfoBlock ... PASS
Flash Write-Read Test, Logical Size=61057 MB
    Begin : ok.
    End : ok.
Scan Bad Block ...   PASS

PASS

Testing Completed!!
C:\>_
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11) Press the power button to shut down the computer and start your reconfiguration as if the drive were brand new.

12) Done.