

This is for the advanced user , know that overclocking and Flashing is not without risk!!!!!!!!!!

The overclocking of the GPU is not treated in this guide , this guide is for how you flash the bios of the GPU.

MAKE SURE BEFORE YOU FLASH YOUR BIOS THAT THE NEW BIOS IS STABLE (test it with RivaTuner , Afterburner or EVGA precision and during running a 3D Application) ,AND ALWAYS MAKE A BACKUP OF YOUR ORIGINAL BIOS!!!!!!!!!!

Things that you need:

-NVIDIA GPU.

-GPU-Z http://www.techpowerup.com/downloads/1709/TechPowerUp_GPU-Z_v0.3.8.html

-NiBiTor

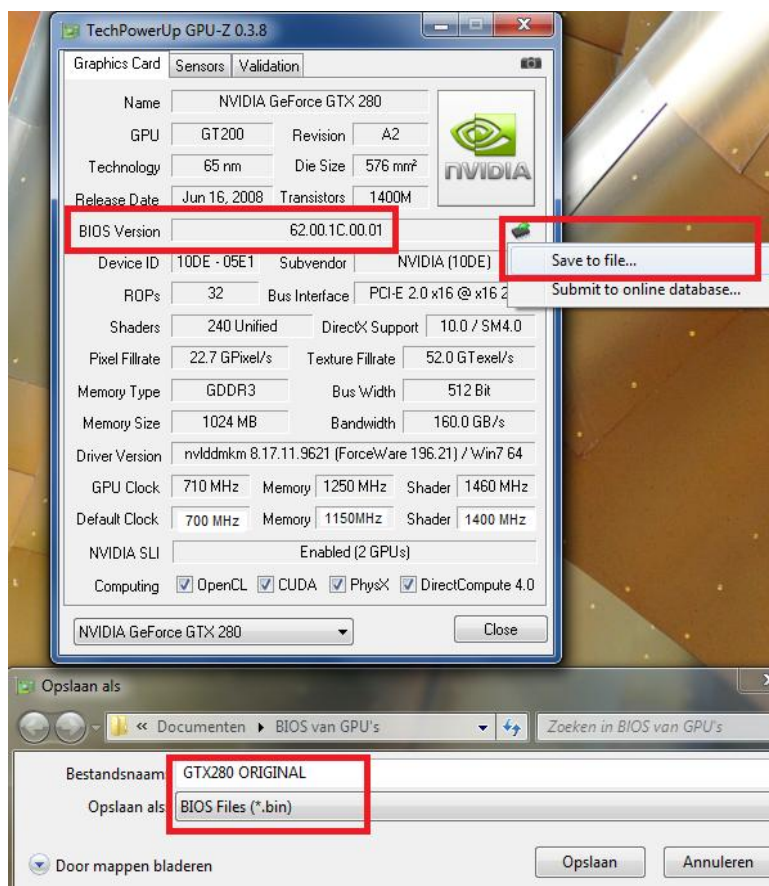
http://www.mvktch.net/component/option,com_remository/Itemid,26/func,select/id,135/orderby,2/page,6/

-nvflash

http://www.mvktch.net/component/option,com_remository/Itemid,26/func,select/id,127/orderby,2/page,3/

-Bootable floppy disk or Bootable USB (this will be explained)

Step 1: Looking at the GPU info and saving your GPU BIOS , this is done with GPU-Z.



Here you see the BIOS version and the possibility to save this BIOS.

GPU-Z saves the BIOS as a (.bin) file.

We need to remember this when we want to open the saved BIOS with NiBiTor.

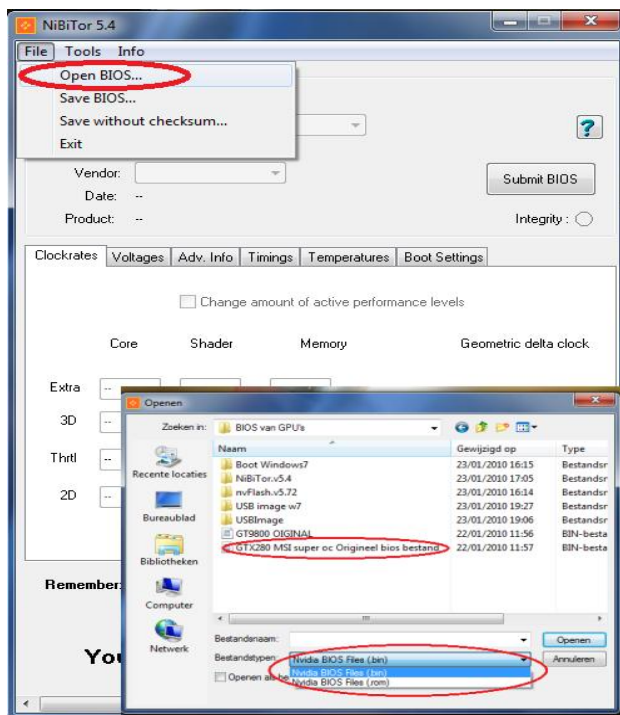
Save the BIOS in a folder that you want, but give it a clear and easy name.

For example: GTX280 ORIGINAL

You see Default Clock, well that is the clock of the bios.

The GPU clock is the clock we get after overclocking or the actual clock at the moment.

Step 2 : Loading the BIOS, this is done with NiBiTor.



Open NiBiTor, with this tool we can edit the BIOS.

Steps:

Open NiBiTor ->

File ->

Open BIOS... ->

Files type (Nvidia BIOS Files(.bin)) ->

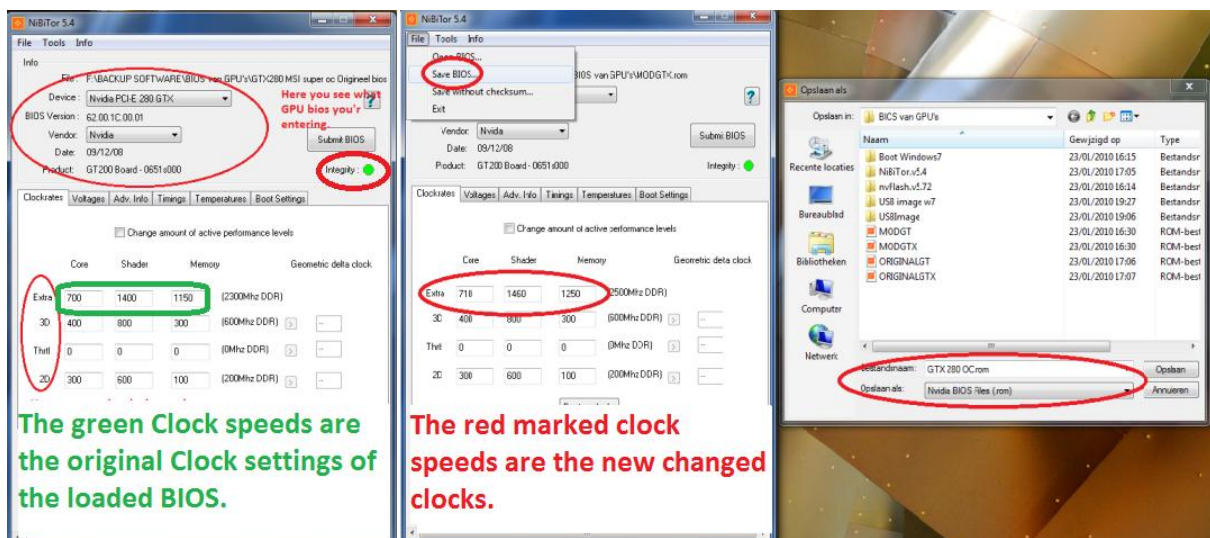
Load the BIOS that you saved with GPU-Z.

Step 3: Changing the clock speeds and saving the overclocked BIOS.(Integrity must be green).

First Save the original BIOS as (.rom) so you can flash it in DOS , (.bin) files cannot be used to flash in DOS. **STEPS** = File-> Save BIOS...-> Save as Nvidia (.rom)-> Give it a easy name and type the .ROM behind the name. (Example= GTX ORIGINAL .ROM) -> Save. **(ALWAYS KEEP BACKUP OF ORIGINAL BIOS)**

Now the original save BIOS is open we can change the Clock speeds, Boot clocks, Voltage, Fan I just changed the clock speeds from Core: 700 to 710 , Shader: 1400 to 1460 , Memory: 1150 to 1250.

We want to save the OC BIOS. **STEPS** = File-> Save BIOS...-> Save as Nvidia (.rom)-> Give it a easy name and type the .ROM behind the name. (Example= GTX OC.ROM) -> Save.



Step 4: Preparing the flash, we need nvflash for this.

You need a bootable floppy disk or a bootable USB,.

The tool to flash nvidia video cards is called nvflash utility and it will need to be run in DOS, from a bootable floppy, CD or USB stick.

You may need to download a particular version for your video card depending on its age, the current latest version is [v5.88](#)

NOTE - you should always have a backup of your original BIOS on a floppy disk or USB so you can do an emergency "Blind Flash" if your BIOS mod fails and bricks your video card.

What is a "BLIND FLASH" it basically means an automated flash of your original BIOS by use of an autoexecuting batch file on a bootable floppy disk.

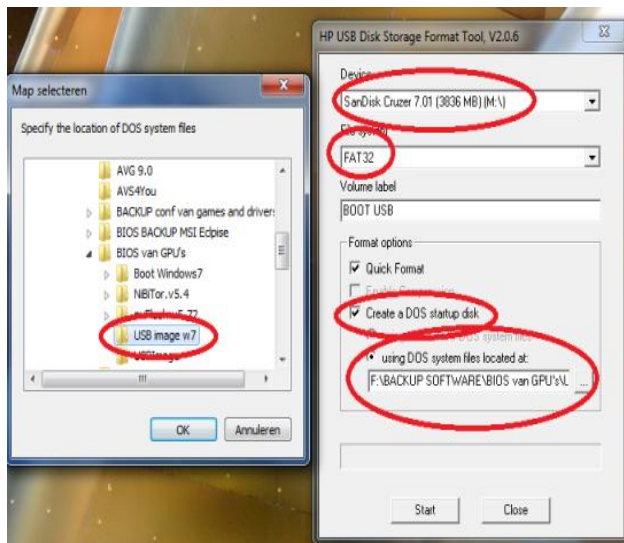
You may need it for when you've had a bad flash and can't get any video output from your card at all.

To do this; preparing for a "BLIND FLASH" and or normal flash.

1) Making a bootable floppy disk;

- * Insert floppy into the drive
- * Right click on the A:\ in "Computer" (or "My Computer" in XP)
- * Select "Format" from the menu
- * When the window pops up put a tick in the box "Create an MS-DOS startup disk"
- * Click "Start"
- * When the warning pops up saying all data will be erased just click 'Ok'
- * When it finishes you will have successfully made a boot disk, click 'Ok' then 'close'

1b) Making a bootable USB



First install "HP USB Storage Format Tool"

It's included in the download package.
(USB Flash ready for NVIDIA).

- Connect your USB to your PC.
- Start "HP USB Storage Format Tool"
- Select the USB
- Select FAT32
- Mark "Create a DOS startup disk"
- using DOS system files located at (pick the "USB image w7" file for this, also included in the download package)
- Start.

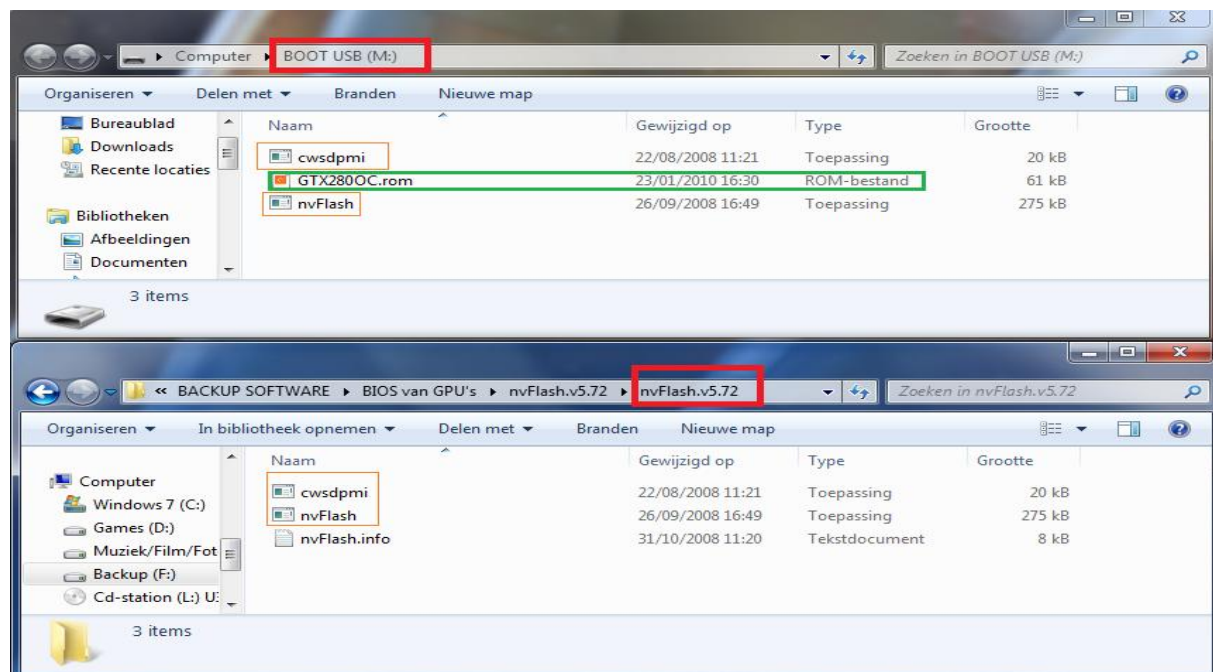
And now it's ready. Keep in mind I tested this on my system, Windows7 64bit, so it's possible that you need to get your own DOS system files to put on the USB.

2) Copy nvflash.exe, cwsdpmi.exe and your original BIOS onto the floppy disk or USB and your backup is ready.

Due to the fail nature of floppy disks I highly suggest making 2 emergency floppies because if you brick your card from a bad flash and your boot floppy disk is corrupt then you're up the creek without a paddle.

Now open the "nvFlash" folder and copy the "cwsdpmi" and "nvFlash" files to the bootable USB or Floppy. Next you copy the BIOS that you created (in my case GTXOC.rom) also to the bootable.

It has got to be a (.rom) ROM-file!!!!!!! or it will not flash , this is why we saved the original bios also as a (.rom) ROM-file, you never know you'll need it. You can also take a backup of you original BIOS in DOS with nvFlash , the command is nvflash --save(File name that you give .rom).



3) BLIND FLASH ONLY : You'll need to make and edit the autoexec.bat file on the floppy or usb to make nvflash run on it's own.

Make a "Autoexec.bat"

How to do this : Open up Notepad, **not** Wordpad, **not** Office Word, **Notepad**.

Now you have an untitled document but we need it named and saved in a specific location.

Click File then Save As .. type in File name **Autoexec.bat** save as Text Documents. **Save it on the bootable USB that you prepared and with the bios already on it**

Now you have a blank document saved on the bootable USB disk but we need to edit in a line in this "autoexec.bat" file.

Open it and:

In the document type: **C:\nvflash bios.rom**

Or , type: **C:\nvflash -4 -5 -6 bios.rom**

Or , type: **C:\nvflash -p -u -f bios.rom**

Then click save and close the document.

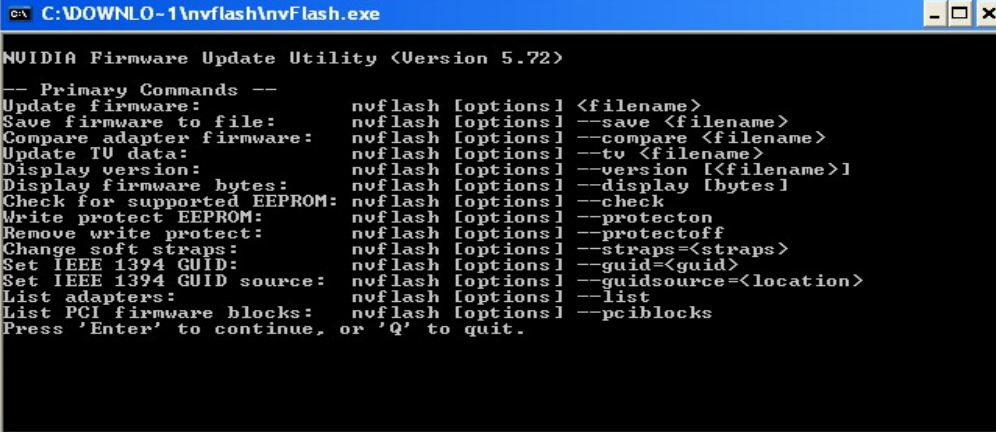
Note again that 'BIOS.ROM' is just an example, you'll need to change it to whatever your original BIOS is called. Then click on the 'File' menu and select 'Save', and close notepad

Step 5: Flashing the new BIOS.

Reboot your pc, make sure that it will reboot from the bootable floppy or USB. (maybe you need to change the boot priority in the motherboard BIOS)

So there are no mistakes the commands are in red.

In DOS you can type = **nvflash** (enter) , now you see all the possible commands.



```
C:\DOWNLO-1\nvflash\nvFlash.exe

NVIDIA Firmware Update Utility (Version 5.72)

-- Primary Commands --
Update firmware:          nvflash [options] <filename>
Save firmware to file:    nvflash [options] --save <filename>
Compare adapter firmware: nvflash [options] --compare <filename>
Update TV data:          nvflash [options] --tv <filename>
Display version:         nvflash [options] --version [<filename>]
Display firmware bytes:  nvflash [options] --display [bytes]
Check for supported EEPROM: nvflash [options] --check
Write protect EEPROM:    nvflash [options] --protecton
Remove write protect:    nvflash [options] --protectoff
Change soft straps:      nvflash [options] --straps=<straps>
Set IEEE 1394 GUID:      nvflash [options] --guid=<guid>
Set IEEE 1394 GUID source: nvflash [options] --guidsource=<location>
List adapters:           nvflash [options] --list
List PCI firmware blocks: nvflash [options] --pciblocks
Press 'Enter' to continue, or 'Q' to quit.
```

Be sure that you use the space bare where needed.

The update command is the default command if no other primary command is specified. The update command installs the specified firmware image or images onto one or more display adapters. By default, the update command scans the system to update all display adapters that match the specified firmware image or images.

Remarks

The override options (--overridesub, --override type) can only be used when there is a single display adapter to be updated with a single firmware image. A single display adapter can be specified with the "--index" option. If there is only one NVIDIA display adapter in the system, then the use of "--index" is not needed. A single firmware image is specified by either just supplying the filename of a single firmware image (which will have a *.ROM extension) or by using the "--fwindex" option when a firmware bundle is specified (which will have a *.NVR extension).

It is important that the update process not be interrupted due to power failure or by a forced reset. If an error occurs during the flash process, it is advisable not to reboot the computer until the problem can be determined. The card may be unable to be restarted if a failed update has occurred (and thus the system as a whole may not reboot).

If the original firmware image contains an IEEE 1394 GUID, the update command will preserve it and NOT use the GUID of the new image.

Where **-5 means** : --override type = Allow firmware and adapter PCI device ID to mismatch.

Where **-6 means** : --overridesub = Allow firmware and adapter PCI device ID to mismatch.

STANDARD BIOS FLASH COMMAND

nvflash --index=1 -5 -6 BIOS.ROM (enter)

I used 'BIOS.ROM' as an example, you'll need to change it to whatever name you gave your modded BIOS.

This command will flash your GPU with the new BIOS that you selected by typing the name of the BIOS.

NO WAY BACK!!!!!!!!!!!!!! Do not interrupt!!!!!!!!!! and wait for the succesfull message.

OVERRIDE SWITCH -4

nvflash --index=1 -4 -5 -6 BIOS.ROM (enter) (BIOS.ROM is example name)

There is an override switch for force flashing mismatched sub-vendor or hardware ID's (often required for flashing a BIOS from a different vendor);

This command will flash your GPU with the new BIOS that you selected by typing the name of the BIOS.

NO WAY BACK!!!!!!!!!!!!!! Do not interrupt!!!!!!!!!! and wait for the succesfull message.

OR THESE 3 BASIC COMMANDS

nvflash --protectoff (enter) = this command let you see the installed GPU(s) **and removes the write protect so you can flash.**

nvflash --save(File name that you give .rom) (enter) = this command makes a save of the selected GPU BIOS. (do this before you flash your new BIOS, so you got a backup of the original).

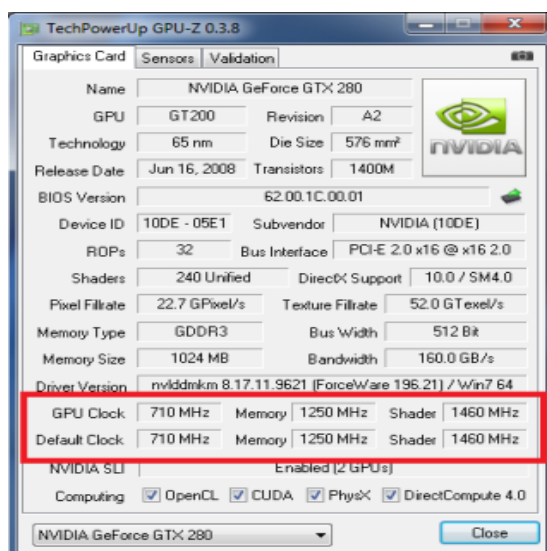
nvflash(Name of the OC BIOS made with NiBiTor and copied to the bootable).rom (enter)
this command will flash your GPU with the new BIOS that you selected by typing the name of the BIOS.

NO WAY BACK!!!!!!!!!!!!!! Do not interrupt!!!!!!!!!! and wait for the succesfull message.

Blind flash = Insert the USB Drive and boot to it and the autoexec.bat file will execute (run) automatically and restore the GPU BIOS to the bios that you put on the USB.

Step 6: Controlling the flashed BIOS.

If you rebooted you pc and Windows starts and you got picture , well that is a good sign.
Now we can check the clocks with GPU-Z.



Now you see that the default clock is the same as the GPU clock.
Succes!!

I would like to thank **"88Gamer88"** for the assistance and the help.
He made a full tutorial in dutch

<http://www.hardware.info/forum/showthread.php?t=179844>

I would like to thank **"chinobino"** for the added info (BLIND FLASH
,the standard BIOS Flash command/Override switch -4 and making a
bootable floppy).

civato. (2010)

