

Weitere Informationen zum Umbau!

Teil 2

MXM Upgrade performs extensive test on each and every MXM card we ship to ensure you will get a fully functional graphics card. The card is then inserted in a ESD protected bag and secured inside the shipping box. All this gives you a 100% guarantee the card shows up on your doorstep in perfect condition. Should the box display mechanical damage that leads you to suspect the actual card itself might be damaged we strongly urge you not to open the box and return the box immediately. Once you open the box, your part of the responsibility begins. If your card is damaged by bad handling or a mistake on your end, this is not covered in any way by MXM Upgrade. This is why you are urged to check the following suggestions and guidelines carefully and follow them meticulously. And whenever you're not 100% sure about what to do, contact us. We will gladly help.

Should, however, your card fail within a year after the successful install of the card, we will gladly send you a replacement card.

General precautions

Remove your battery and power connection. Make sure you have decent and correct size screw driver at your disposal. Unscrewing your notebook with a badly chosen screwdriver may wear out your screws extremely fast. Make sure you don't loose any of these screws. Remember exactly what goes where. Amilo users: there is often one single longer screw that holds the keyboard. Misplacing this screw will destroy your fresh card.

1. ESD



ESD (ElectroStatic Discharge) can and will destroy regardless what electronic component if proper precautions are not taken. These precautions should not be limited to handling your MXM card, they apply from the moment you start opening your notebook. Basically, friction can cause the human body to be charged up with several thousand volts of static electricity. If your supercharged finger comes into contact with a pin of a semiconductor, you can zap it without you even knowing or feeling this.

To avoid this, you have to make sure you ground yourself regularly or even constantly. You can ground your self by touching central heating system pipes or water pipes. Make sure you don't wear insulating shoes (no shoes at all is best). To ground yourself permanently, you can wrap a copper wire around your pulse or ankle and wrap the other end around a heating pipe,...

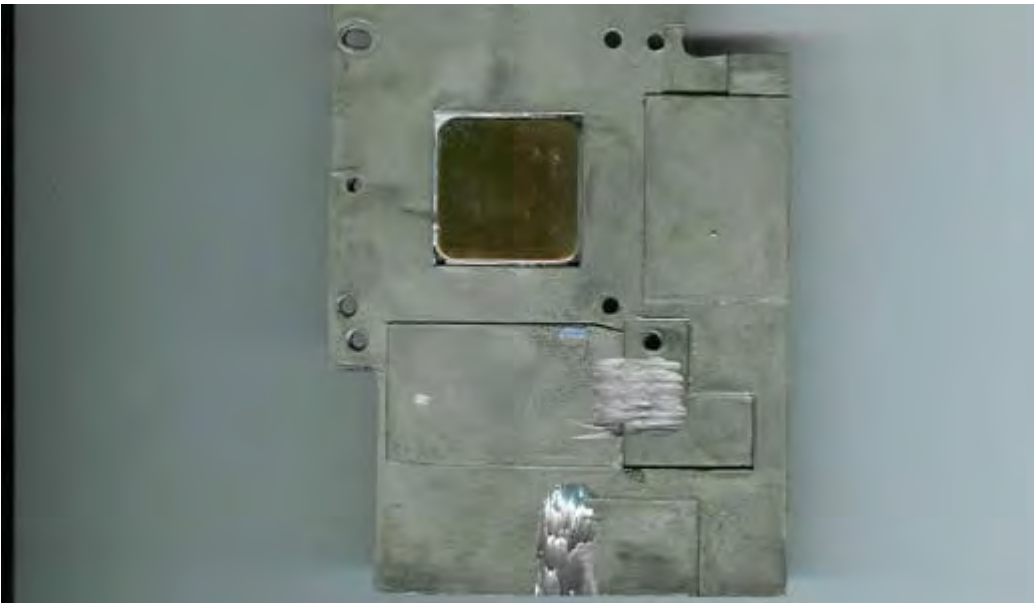
Even if you have taken these precautions, you should still avoid touching exposed copper on the card. Touch the card only at the edge.

2. Mechanical

Upgrading, especially to larger, more powerful cards, often comes with the need to adapt the heatsink of your notebook. Especially the coils on the MXM cards are often located on a different spot and the cutouts for the original coils are no longer functional. Best thing you can do is to remove the heatsink from your notebook altogether and put your new card where it is supposed to go. There's a decent chance you will find that the heatsink touches a coil before the GPU itself has a chance to touch the heatsink with or without the original heatpad on it. Obviously, you will have to remove some of the heatsink material in order to allow the GPU to make proper contact.



A Dremel is the easiest and most efficient tool to use, especially with a cutting disk, but with a little imagination and some mechanical inclination there are other ways. While working your heatsink make absolutely sure that you keep it as far away from your notebook as possible. Metal scraps and electronics don't mix well. Once your done, make sure you remove any and all scrap that may stick to the heatsink. The end result may look something like the following picture. It shows a heatsink from an Amilo 3438, modified to accept both 7900GS and x1800 cards.



Our cards often don't come with the same mounting provisions as your original card, but they do com with 4 x M2.5 x 10mm screws plus 8 bolts. This should allow you to set up your card as shown in the picture. While much of the thermal material out there requires some form of pressure to be effective, it should be noted that putting to much pressure on your bolts when securing your card may warp and bend the card and eventually destroy it. Moderation is the keyword here. Furthermore, make sure not to bolt down one side of the card before the others are secured. Increase the torque evenly over all sides.



3. Thermal

The thermal side of the story remains, without a doubt, the most difficult and cloudy of an MXM Upgrade. Potential problems are often not even limited to stepping up a thermal class. While MXM card have their vBios onboard and therefore do not require a different bios on the motherboard, the thermal system is still piloted by the motherboard. It acts on the data it gets (from the CPU and GPU) and throttles it's fans accordingly. This is why the fans often don't react to GPU temp the way they should. The temperature is simply not recognized or if it is the fan speed is not sufficient because the system is 'used to' a less powerful card.

Obviously, general precautions apply. Make sure your notebook is on an even surface, that nothing is blocking the fan intake or exhaust, keep the radiator clean of dust,... For the Amilo line of notebooks, it is also recommendable to lift the backend of the notebook a bit to allow the fan to take in fresher air.

First of all, make sure that the GPU makes good contact with the heatsink. If you have additional heatpads for the RAM, use them. If the RAM is too far away from the heatsink to make contact through the heatpads, it's still better to cut them in two and to stack them than not to use any at all. If you can, use some thermal pads to have the coils make contact with the heatsink.

If your GPU still gets to hot after this, there are a few things you might try..

3.1 Hardware reset for Amilo and other Unwill notebooks

- * Remove the battery and power plug and all other peripherals (USB keys, harddrives, dongles,...)
- * Press the power button for at least 15 seconds.
- * Plug the battery and the power cord back in.
- * Boot into the bios, restore the default values, save and exit.

Your system should now react correctly to the new card. This procedure works for Amilo notebooks or other brand equivalents (Alienware m5xxx,...). While we have no reports on other ODMs using the same mechanism, it won't hurt to try. If it doesn't work out, Google around a bit if you perhaps can't find out about the right reset procedure for your notebook.

A variation to this theme is doing the exact same thing plus removing the CMOS battery from your motherboard before hitting the power button.

3.2 Decrease thermal resistance.

If you have to mill your heatsink anyway, it certainly pays to remove enough material so the GPU actually touches the heatsink without thermal pads. Adding a thin layer of Artic Silver instead of the heatpad will decrease the temperature of your GPU with a few degrees. If you have some small

copper sheets available, you can see if you can fill the gap between the GPU and the heatsink with it. Use AS5 to make sure the copper makes good contact with both the GPU and the heatsink.

****CAUTION**** Using artic silver, copper or regardless what metal based thermal material introduces the risk of shorting out your MXM card. If you do, this will not be covered in any way by MXM Upgrade. Take every precaution you can. If you plan to use metal based materials, please cover the area around the GPU die with tape. Some of the cards provided by MXM Upgrade already have this, as shown in this picture..



3.3 Notebook Hardware Control ACPI script

In case you can't make your fans to react to the temperature of the GPU, you may need to find another way to have your fan rev up. In single fan systems, the same fan is used to cool the GPU and CPU. That means that if your CPU heats up, the fan will provide some very basic cooling. This is usually enough to provide cooling for simple webbrowsing and such, but nowhere near enough for decent gaming. There's a very easy thing you can do to improve cooling a bit: use the maximum performance profile in NHC. This will cause your CPU's temp to rise and trigger the fan more and hence cool the GPU more. This may or may not suffice to play games, depending on your notebook. If it does not, you may have to resort to the ACPI script feature of NHC. The tabs to control your temperature will basically fake higher CPU temperatures. By doing so, the system will assume the CPU is very hot and rev up the fan.

The only difficulty here is finding the correct ACPI script. Courtesy of Mazek and Pirate85, [here](#) is the script for some Amilo notebooks. Strange thing is that when per example inserting a 7900GS in a Amilo M3438 this will change the name of the notebook, so the script will not work out of the box. In the example, you'd have to open the files in the archive and change all the occurrences of P71N0 into P71y0. You can trace what it has changed to in the properties tab of NHC.

If there is no script available for your type of notebook, Google is you friend!

3.4 Hardwiring the fan

A less subtle approach, this will assure maximum cooling. Even with the NHC method, the resulting temperature seen by the system might be the average between the fake and real temp and the fan will still not rev up to maximum speed. There are several ways to do this. You can hardwire 5V to your fan directly, or wire up a switch with the original connection and 5V, make your own temperature controlled fan unit,... There are a gazillion options but they all have this in common: don't even think about it unless you have the skills needed.

4. Drivers

Chances are you will be needed new drivers whenever you install a new card, but most certainly when changing between nVidia and ATI. If you can, uninstall all graphics drivers and utilities before starting with the actual upgrade. When your fresh card is installed, download and install you new drivers. Please note that normal desktop drivers from ATI or nVidia can not be used.

For nVidia; please check out laptopvideo2go. Do these guys a favor and check out the [FAQ](#) section of their forums before asking questions.

For ATI, check out the Omega drivers.

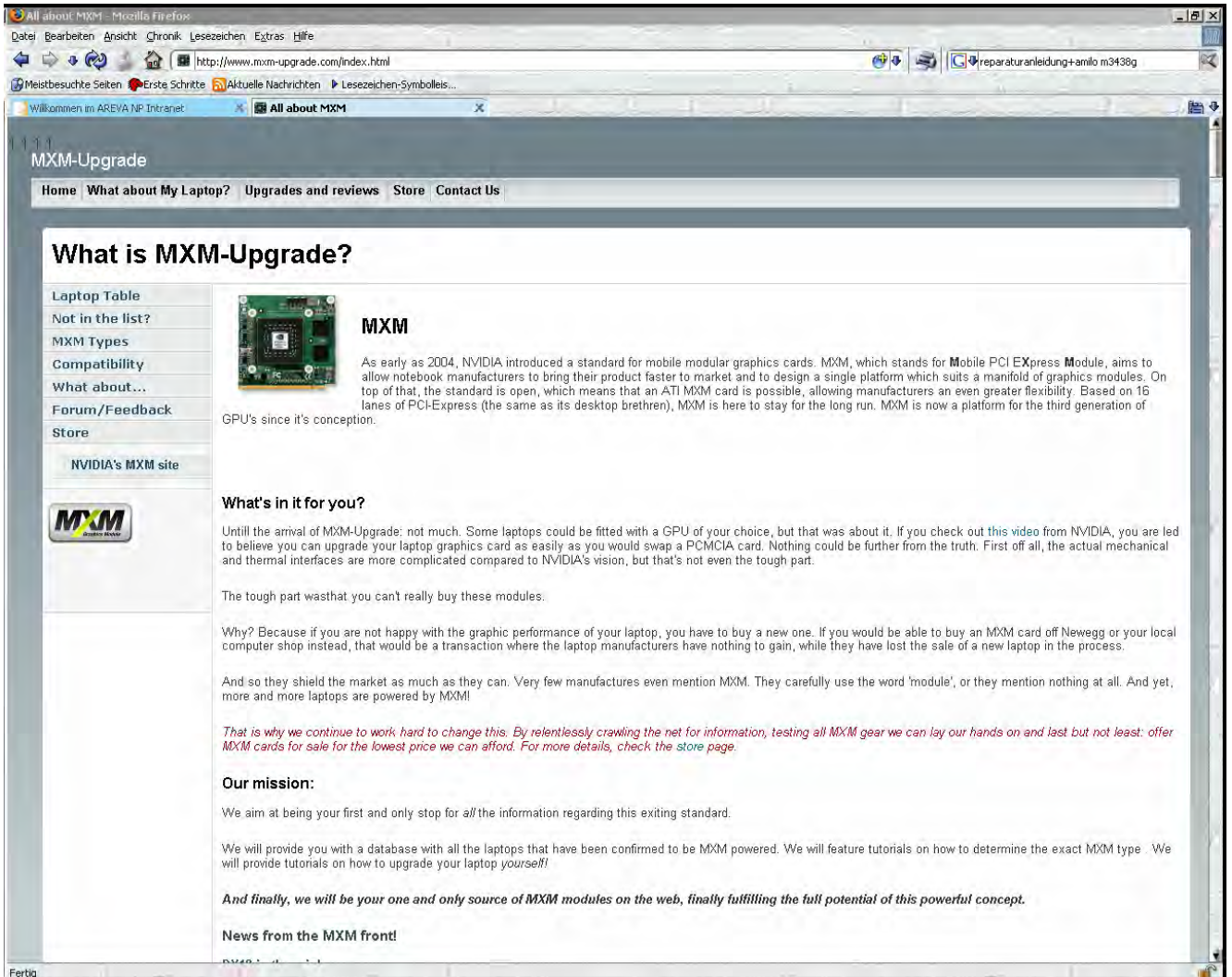
Install and reboot!

Enjoy your new MXM card,

Hier ist die ganze Information zu finden:

<http://www.mxm-upgrade.com/index.html>

...und so sieht die Seite aus:



Und hier liegen diese ganzen Informationen:

Läuft da mit nem MXM Type III Modul:

<http://www.mxm-upgrade.com/Fujitsu.html>

<http://www.mxm-upgrade.com/Table.html>

<http://www.mxm-upgrade.com/types.html>

<http://www.mxm-upgrade.com/store.html>