

Introduction

AMDOverdriveCtrl lets you control the frequency and fan settings of your AMD/ATI video card. It depends on the proprietary AMD/ATI Catalyst display driver and makes use of the AMD Display Library (ADL) library.

It is developed with the “codelite” IDE (www.codelite.org) and uses the wxWidgets framework (www.wxwidgets.org).

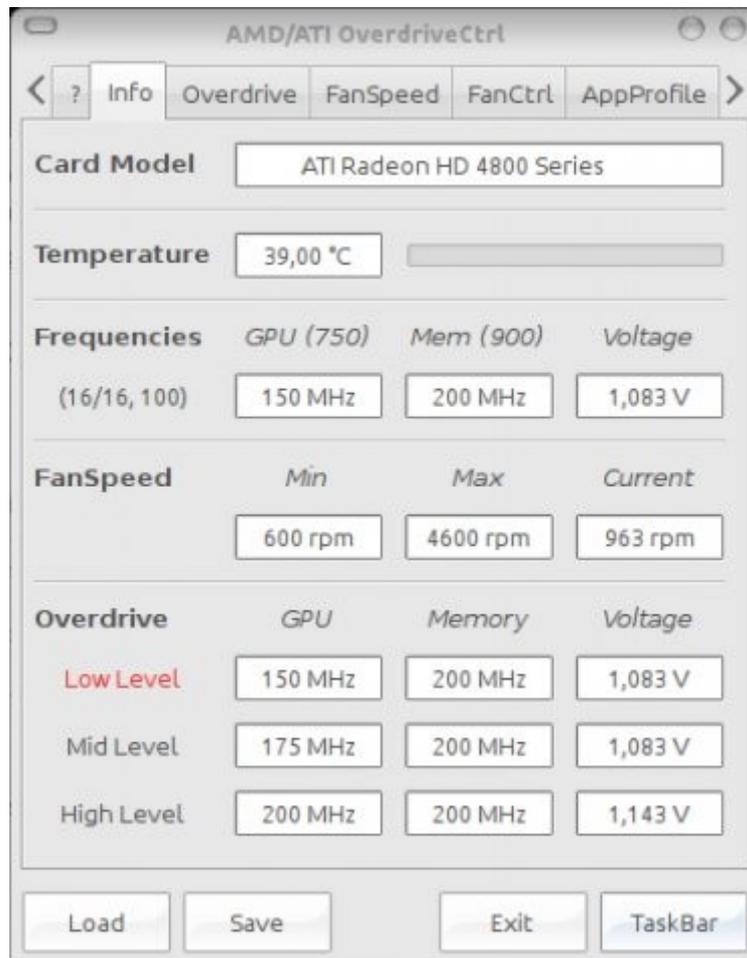
I tested the tool with a Radeon HD 4870 video card under Ubuntu 10.10 with the catalyst drivers 10.11 and 10.12.

The project is hosted on SourceForge (<http://sourceforge.net/projects/amdovdrvctrl/>) and is released under the GPL license.

If you want to compile the source, you will have to download the ADL SDK from the AMD website and place the extracted SDK folder into the project folder under the name of “ADL_SDK”. You can get the SDK from <http://developer.amd.com/gpu/adlsdk/Pages/default.aspx>.

If you have any questions, feel free to contact me or use the SourceForge forum for discussions.

Info Tab



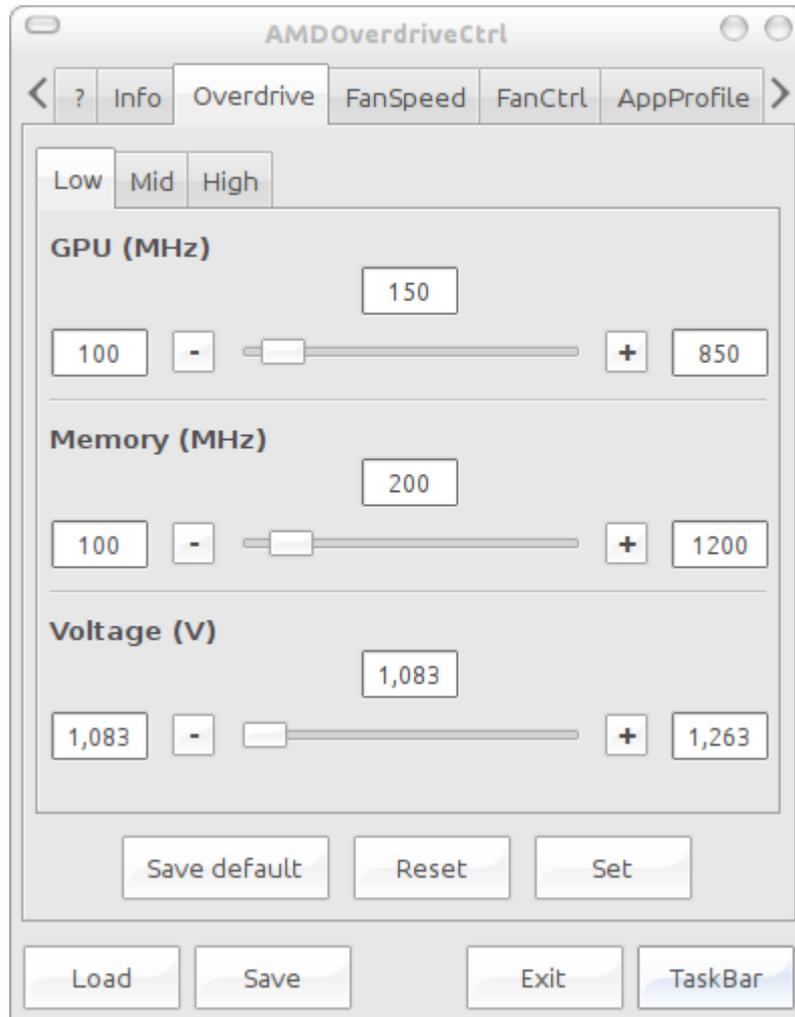
The Info tab displays basic information about your video card.

- Card model: model of the video card as delivered by the ADL
- Temperature: current temperature of the GPU
- Frequencies: current values
the values in Brackets are the card's default frequencies
the values (16/16, 100) mean current pcie lanes / max pcie lanes, pcie frequency
- FanSpeed: min, max, current as delivered by the ADL
- Overdrive: frequencies and voltages of the three levels

What is overdrive?

The Catalyst driver chooses a performance level according to the GPU load. For example most of the time for normal desktop use the low level is active and only sometimes the level is raised for a second. For example I have compiz enabled and for me this happens now and then if I move the mouse over my AWN dock.

Overdrive Tab



For each level you can choose GPU and Memory frequency and the voltage to apply. The range of values and the possible step size depends on your video card model and the BIOS of your video card.

By pressing “Set” the values for all three levels are applied at once. “Reset” sets the values the tool found at startup. “Save default” will set the values for all three levels and save them to default.ovdr in the application folder.

NOTE: You should keep the frequency of the memory constant throughout all three levels. Otherwise you will see screen flickering when the catalyst driver changes the levels. This is probably caused by the hardware, because the video memory has to be accessed constantly to display the screen picture. If you change the frequency of the memory this access is “disturbed” for split second and flickering occurs.

Also keep in mind not to set the memory frequency to low, because a certain minimum bandwidth is needed to be able to display one or two (or even more) screens and to “feed” the GPU.

Go ahead and play around with the sliders a little bit. You probably won't damage your video card, but may encounter a system crash once or twice.

FanSpeed Tab



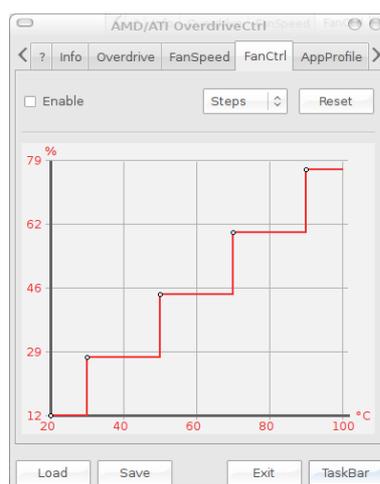
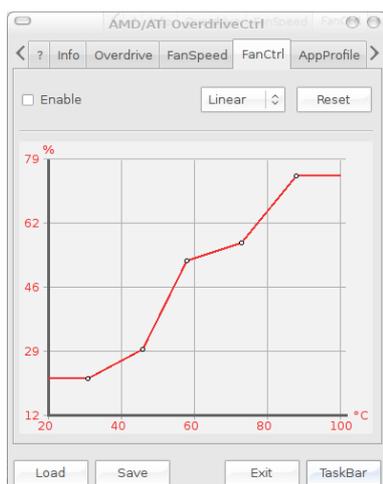
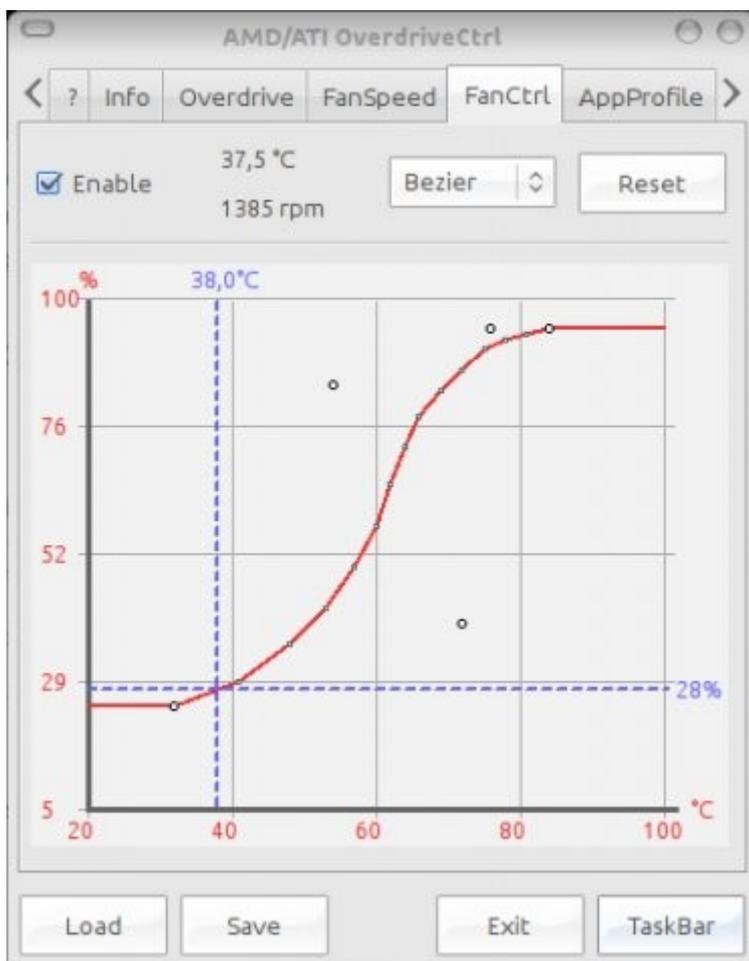
On this tab you can set a fixed fan speed. The possible range is again delivered by the ADL.

I only tested with a reference design video card. There are a lot of custom fan designs out there which might not work.

If you click "Default" the automatic fan control embedded in the video BIOS is activated.

By clicking "Profile" the tool will apply fan speed settings from min to max and record the corresponding fan speeds. In the example above you can see that within the first ~20% my video card does nothing and then slowly ramps up the fan speed. You can also see that the fan speed does not increase linear with the percentage and the actual speed maximum is higher than the ADL reported.

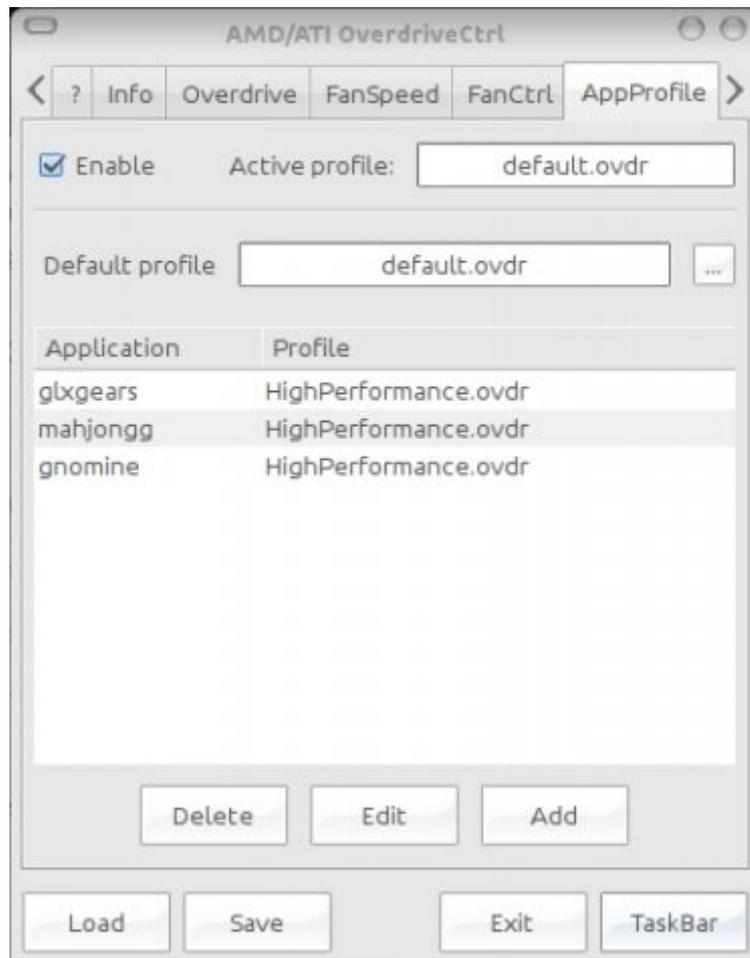
FanCtrl Tab



On this tab you can create your own fan control characteristic curve. You can choose between a Bezier curve, certain discrete steps and a linear interpolation. The blue lines indicate the currently set values.

To prevent rapidly up/down spinning from the fan some sort of hysteresis is applied.

AppProfile Tab

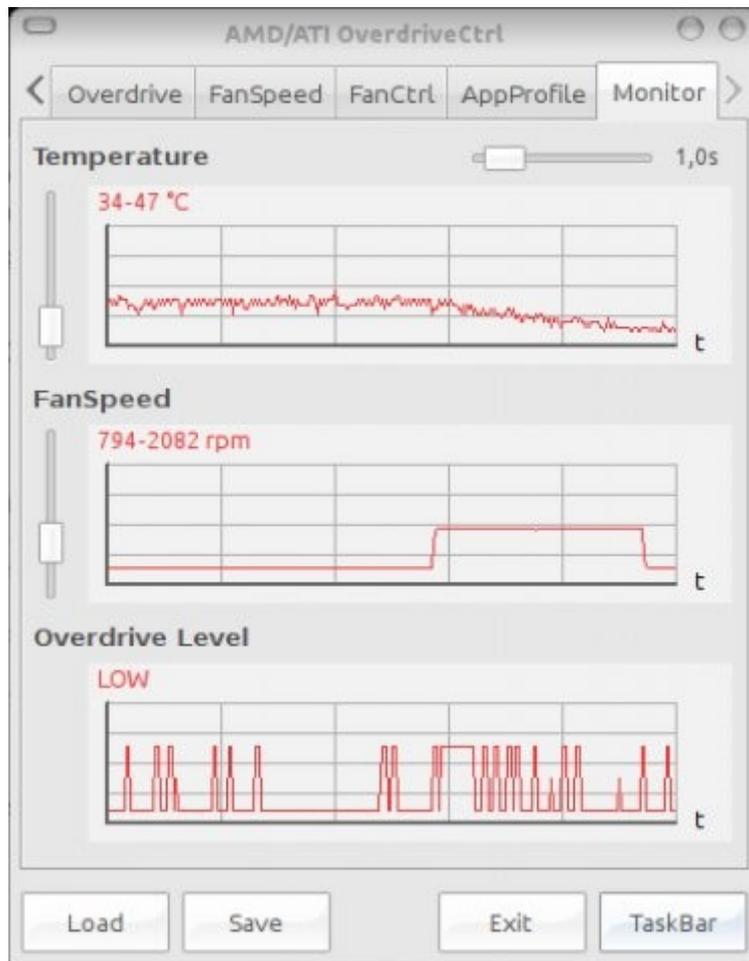


If you enable the application profile feature the tool will constantly check if one of the applications from the list is started and if so it will apply the corresponding application profile. When the application is closed, the default profile will be activated again.

How to create an app profile:

Just set the overdrive and fan settings to the values you like. Test the settings and if you feel comfortable, save them as a *.ovdr file. Now click "Add" and enter the name of your application and choose the profile you just saved. The application name must match the name of the application which is shown if you call "ps" on a command line.

Monitor Tab



Here you can see some long term values of your graphic card. You can adjust the sample frequency with the slider in the upper right corner. Possible values are 0.1s to 10.0s and OFF.

Hints

- Make use of the tray icon. You can directly choose any application profile you defined, activate the startup at login feature and hide/show the tool dialog.
- Activate/deactivate an application profile by double clicking in the application list
- If you save to “~/AMDOverdriveCtrl/default.ovdr” the values will be applied at startup
- Call “AMDOverdriveCtrl my_settings.ovdr --batch-mode” to set values without gui
- Use “--enable-app-profiles” to start with application profiles enabled

Configuration files

See below for the XML configuration files created by the tool. The files will be stored in the hidden folder : “~/AMDOverdriveCtrl”

- “VeryFirstStart.ovdr” values the tool found when it was started for the first time
- “Current_Startup.ovdr” values the tool found before the current startup
- “default.ovdr” optional, if existing the containing values will be set at startup
- “FanProfile.xml” optional, values for the curve on the “FanSpeed” tab
- “AppProfiles.xml” optional, the application profile table
- “autostart” shell script for startup at login

The configuration files are all human readable and you can edit them directly if you like.

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