

# Flashing ATI Radeon cards for using them with Apple PowerMac AGP.

Rev 1.01



The following guide is intended to explain how to flash a common ATI Radeon graphic card 9200/9250 AGP model, due to make them compatible with Apple PowerMac G4/G5 computers and use them with MorphOS 2.6 and next releases, with OSX, OS9, Linux.

Once the changes will be executed it will be possible to use all the Apple PowerMac G4/G5 features, like OSes and Open Firmware. You will find exhaustive explanations at the following website:

<http://themacelite.wikidot.com>

## **ATI Radeon 9200/9250 AGP graphic cards flashing rom procedure.**

- 1)** Get a ATI Radeon 9200/9250 AGP graphic card for x86 PC, like one of those showed here:

[http://www1.sapphiretech.com/en/products/graphics\\_specifications.php?qpId=59](http://www1.sapphiretech.com/en/products/graphics_specifications.php?qpId=59)

- 2)** Use a x86 PC with AGP slot for flashing/upgrading ROM. It is recommended using a PCI graphic card to display the video of the PC (while using the ATI Radeon with the AGP slot) due to work without swapping cards, just in case something should go wrong and you should restart the operation.  
To set this, enter the BIOS of PC and assign the display video priority to PCI graphic card.  
Create a bootable DOS disk, using the floppy format option of Windows.

*Note: if the PC hasn't the internal floppy unit, it is possible to use an external floppy disk drive (if BIOS allows bootstrap from those units), from a USB KEY or even from a "freedos cdrom" mounting an external FAT/FAT32 unit.  
Alternatively (but not recommended) it is possible to use the PowerMac itself for flashing ROM. See Ps1 note at the end of this guide.*

- 3)** Download the utility ATIFLASH for flashing AGP video cards. For example, use version 3.10:

[http://us4-dl.techpowerup.com/Utilities/BIOS\\_Flashing/ATI/atiflash310.zip](http://us4-dl.techpowerup.com/Utilities/BIOS_Flashing/ATI/atiflash310.zip)

or next, downloadable here:

<http://www.techpowerup.com>

Unzip the file and put it in the bootable floppy you created at step 2.

- 4) Get the right Mac ROM for upgrading/flashing ATI Radeon 9200/9250 AGP cards and unzip it inside the previous created floppy disk (see step 2) and eventually rename the ROM(s) once unzipped. Try a rename even in case ATIFLASH utility should display a "file not found" message.

Here a list of ATI cards ROMS with 64kb or 28kb size:

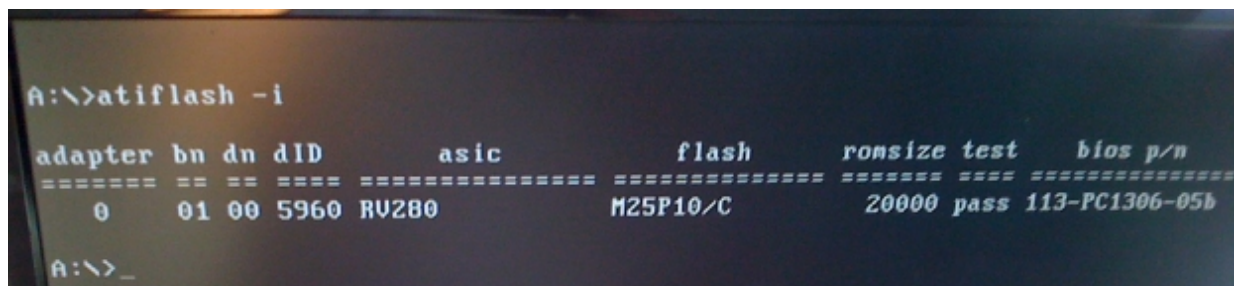
<http://themacelite.wikidot.com/wikidownloads2>

It is recommended trying different ROMS to verify perfect compatibility with own AGP graphic card.

The following ROM is the one I used with ATI Radeon 9200, 9250 AGP graphic cards and it makes a perfect use of DVI and VGA video output (see step 1):

[http://themacelite.wikidot.com/local--files/wikidownloads2/R9250\\_127\\_reduced.rom.zip](http://themacelite.wikidot.com/local--files/wikidownloads2/R9250_127_reduced.rom.zip)

- 5) Power on the PC with DOS bootable floppy in which you have stored the ATIFLASH utility and the ROM(s).
- 6) Enter "**atiflash-i**" to make utility showing infos about ATI AGP video cards that will be numbered counting from 0. So this number below the label "adapter" means the card is correctly recognised.



```
A:\>atiflash -i

adapter bn dn dID      asic      flash      romsize test      bios p/n
===== == == =====
0      01 00 5960 RV280      H25P10/C      20000 pass 113-PC1306-05b

A:\>_
```

- 7) Save the current x86 compatible ROM before flashing card (just in case you want to restore it), typing for example:

"atiflash -s 0 9250bk\_x86.rom".

Program will display something like this:



```
A:\>atiflash -i

adapter bn dn dID          asic          flash
===== == == =====
      0   01 00 5960 RV280          M25P10/C

A:\>atiflash -s 9250bk.rom
Format: ATIFLASH -s <adapter num> <filename> [length]

A:\>atiflash -s 0 9250bk_x86.rom
0xD000 bytes saved, checksum = 0x4200

A:\>
```

- 8) Do the Mac ROM upgrading/flashing operation typing f. e. "atiflash -p 0 9250red.rom -f", assuming "9250red.rom" is the name of new Mac ROM you are using. Finally, at the end of operation, type again "atiflash -i" to see details after the flashing.



```
A:\>atiflash -p 0 9250red.rom -f
Flash type: M25P10/C
10000/10000h bytes programmed
10000/10000h bytes verified

A:\>atiflash -i

adapter bn dn dID          asic          flash
===== == == =====
      0   01 00 5960 RV280          M25P10/C

A:\>_
```



You can find further informations about flashing here:

<http://themacelite.wikidot.com/ati-flash>

- 9)** Now it is necessary to check what kind of PowerMac G4/G5 AGP model is before using the flashed graphic card. If you are going to use it with an older PowerMac AGP Graphics "Sawtooth" or with PowerMac G5 AGP, then go straight to step 11. You will find an exhaustive list of compatibility cards/models here (search for datas in the line reporting Radeon 9200):

<http://themacelite.wikidot.com/compatibility>

- 10)** All PowerMac AGP models need the graphic card hardware mod except for AGP Sawtooth model and G5 AGP model. If you have any doubt about what model your PowerMac is, see here:

[http://en.wikipedia.org/wiki/Power\\_Mac\\_G4](http://en.wikipedia.org/wiki/Power_Mac_G4)

It is necessary to DISABLE two PINS of the graphic card you are going to use and the reason, as well as the whole procedure are fully explained here:

<http://themacelite.wikidot.com/pins-3-and-11>

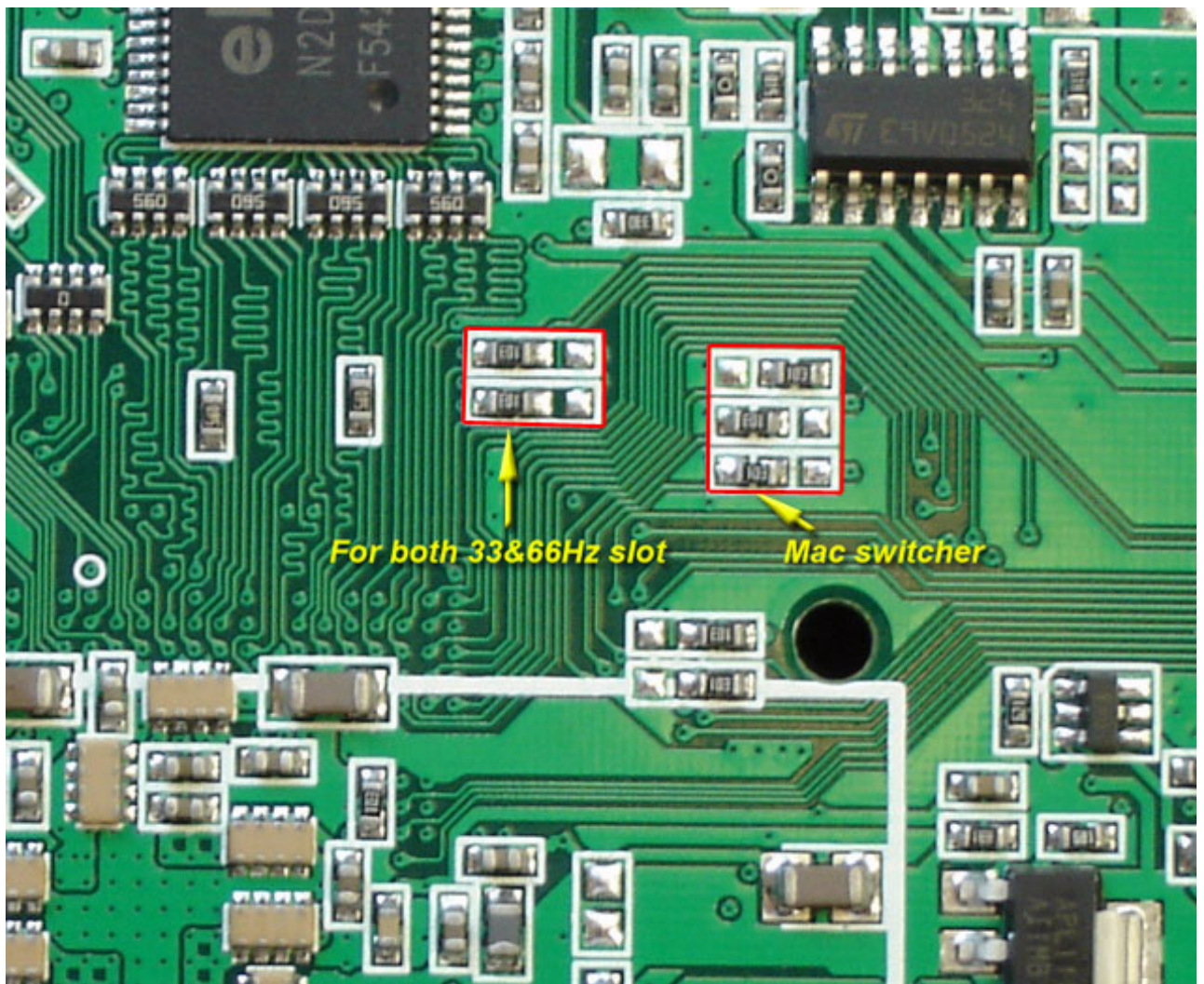
Pins 3 and 11 can be disabled in many different ways. But it is recommended to use the easy one, applying a little insulating material like scotch tape, which can be easily removed for next mods.



- 11)** Now insert the ATI Radeon 9200/9250 graphic card in the AGP slot of your PowerMac. Power on the computer and press the "ALT" button. Probably, you will see the output video but with corrupted or not well displayed graphic. In this case, you should perform the last hardware modification explained in step 12.
- 12)** Last hardware modification (to perform if the step 11 fails). It is necessary another specific hardware mod for the ATI Radeon 9200/9250 AGP, exhaustively explained here:

<http://themacelite.wikidot.com/9250-trick>

Usually, it is enough to remove the last "Mac switcher" resistor located below, as seen in the picture:



- 13)** Now insert the modified ATI Radeon graphic card AGP in your PowerMac G4/G5, power on and press the "ALT" button. If all is went well you will see the early menu with all bootable units. If not, try to use the other video connector swapping from VGA to DVI or vice versa.  
If nothing is displayed, probably you use a wrong ROM. So go back to step 8 and repeat the flashing process using another Mac ROM among those you can pick here:

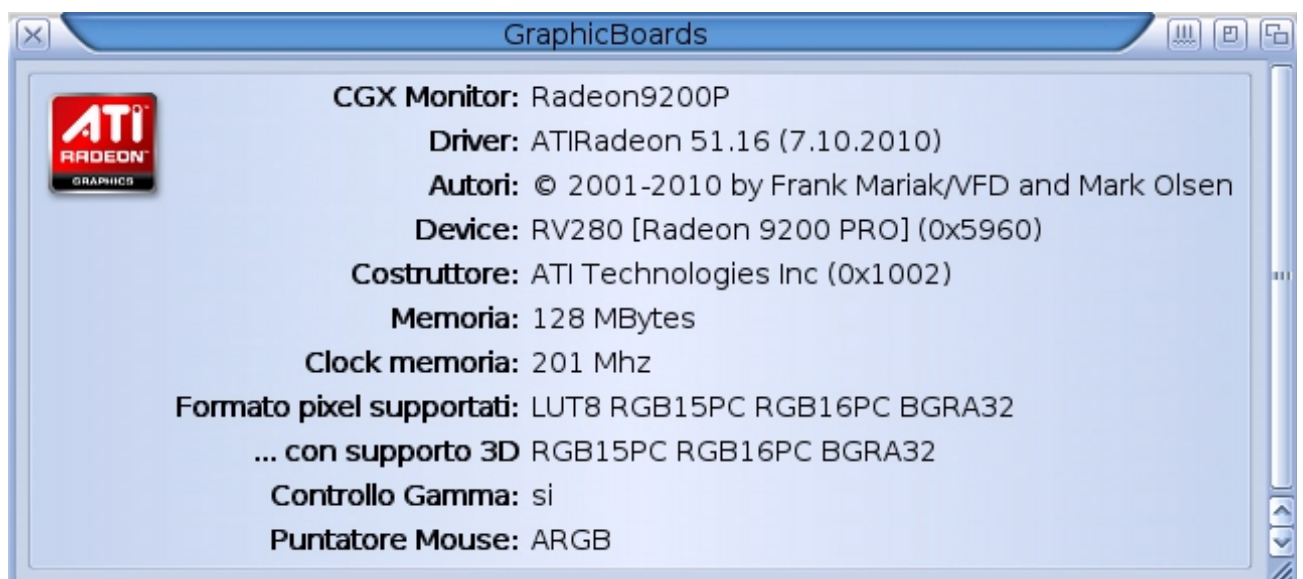
<http://themacelite.wikidot.com/wikidownloads2>

*Note: it is still possible flashing/upgrading your ATI Radeon with your PC x86 though you operated mods showed in step 10 and step 12*

- 14)** Well, now it's time to examine the software part!  
Let's see the Operating Systems we can use with PowerMac G4 and G5:

## MorphOS

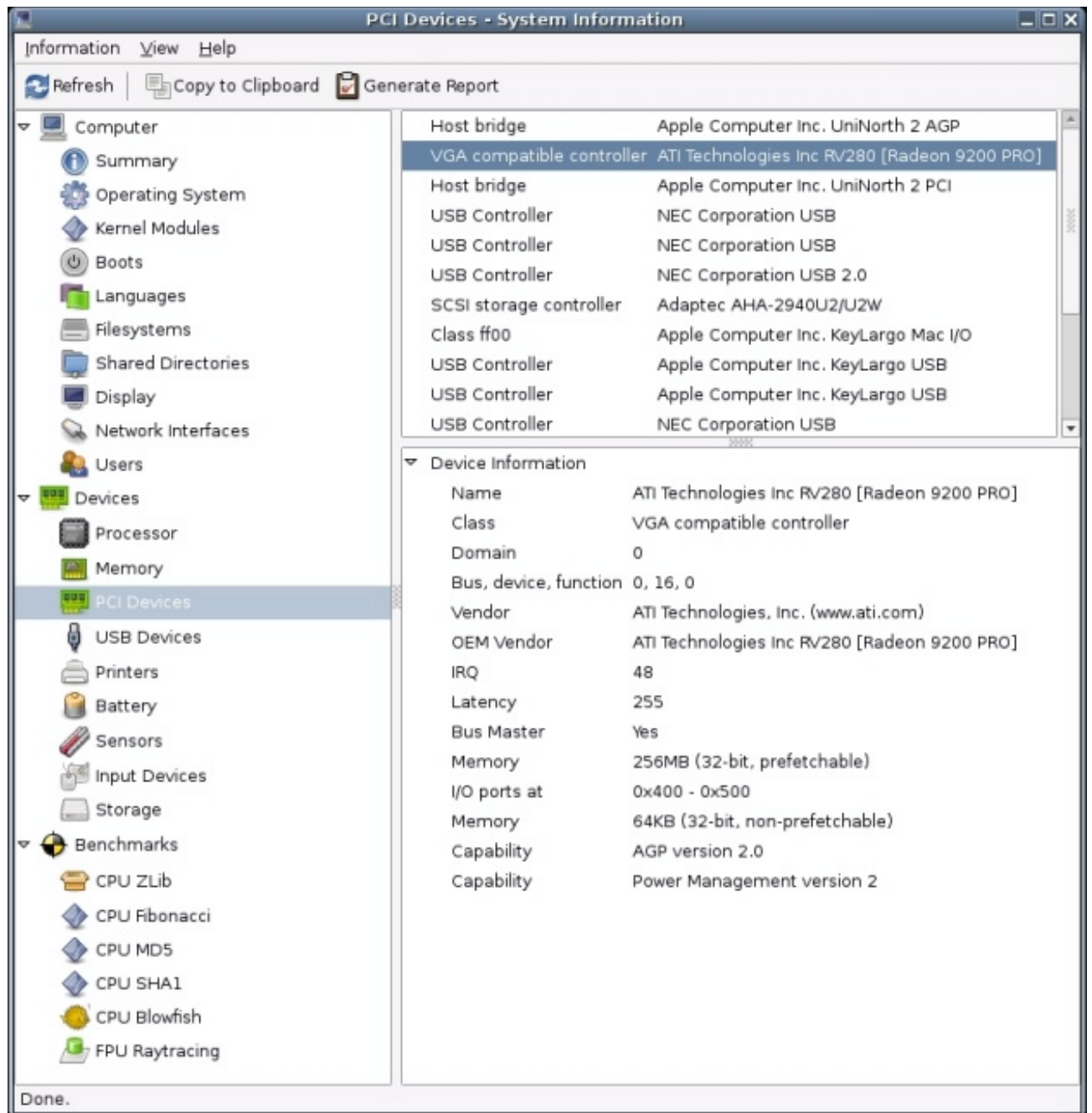
No need to install additional software. 2D and 3D drivers are included in the Operating System yet.





# Linux

No need to install additional software. 2D and 3D drivers are included in the Operating System yet.



*Debian Linux in the picture*



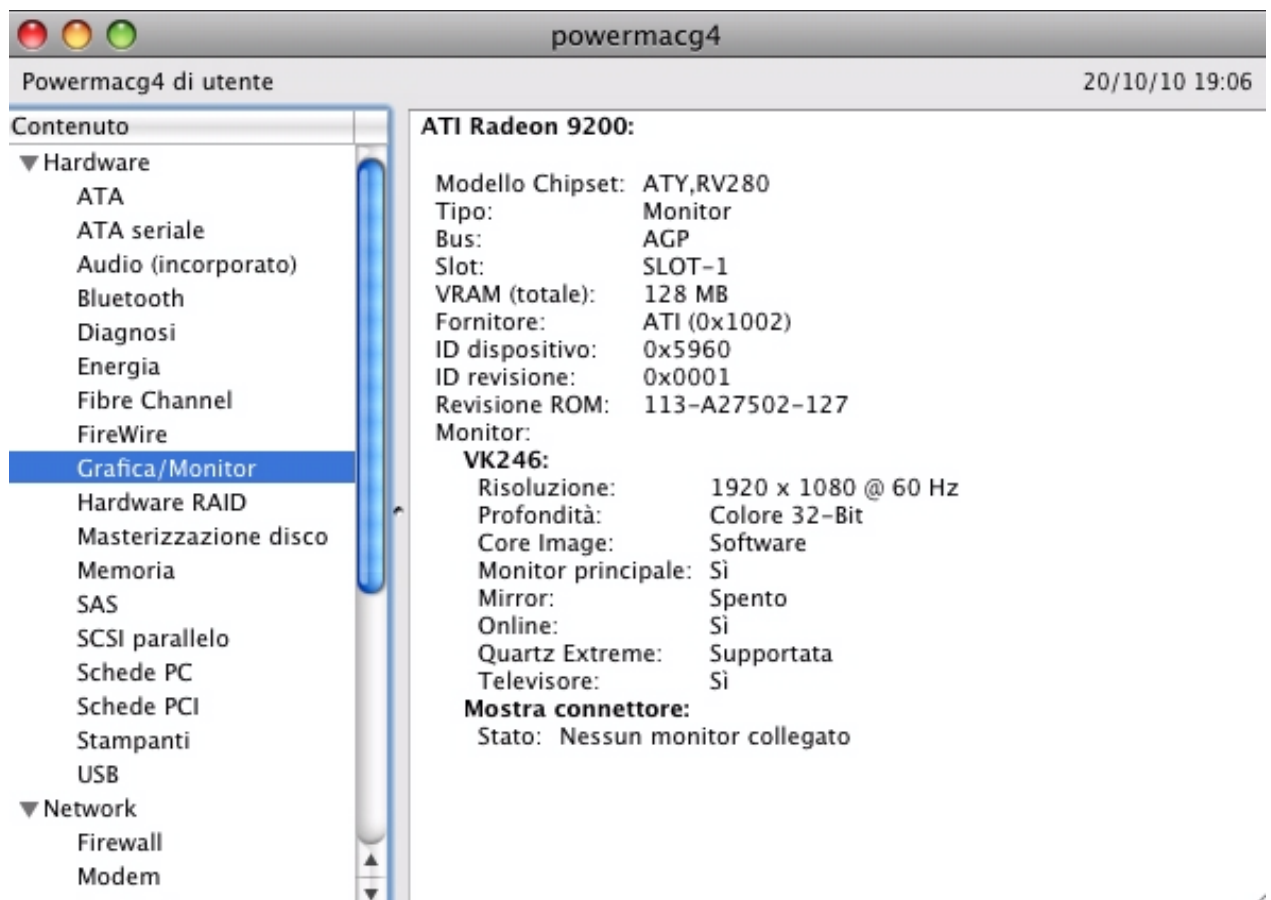
OSX Leopard (10.5.x)  
OSX Tiger (10.4.x)  
OSX Panther (10.3.x)

It is necessary to install a dedicated pack otherwise you will have a wrong video output or incomplete video functionalities. Download the following archive:

<http://strangedogs.wikispaces.com/file/detail/ati-aug2005-radeon-universal-rom-update.dmg.zip>

and unzip it.

Reboot computer and during bootstrap press and hold "SHIFT" button to start in "safe mode". Install the package unzipped and when installation is finished, reboot computer again.



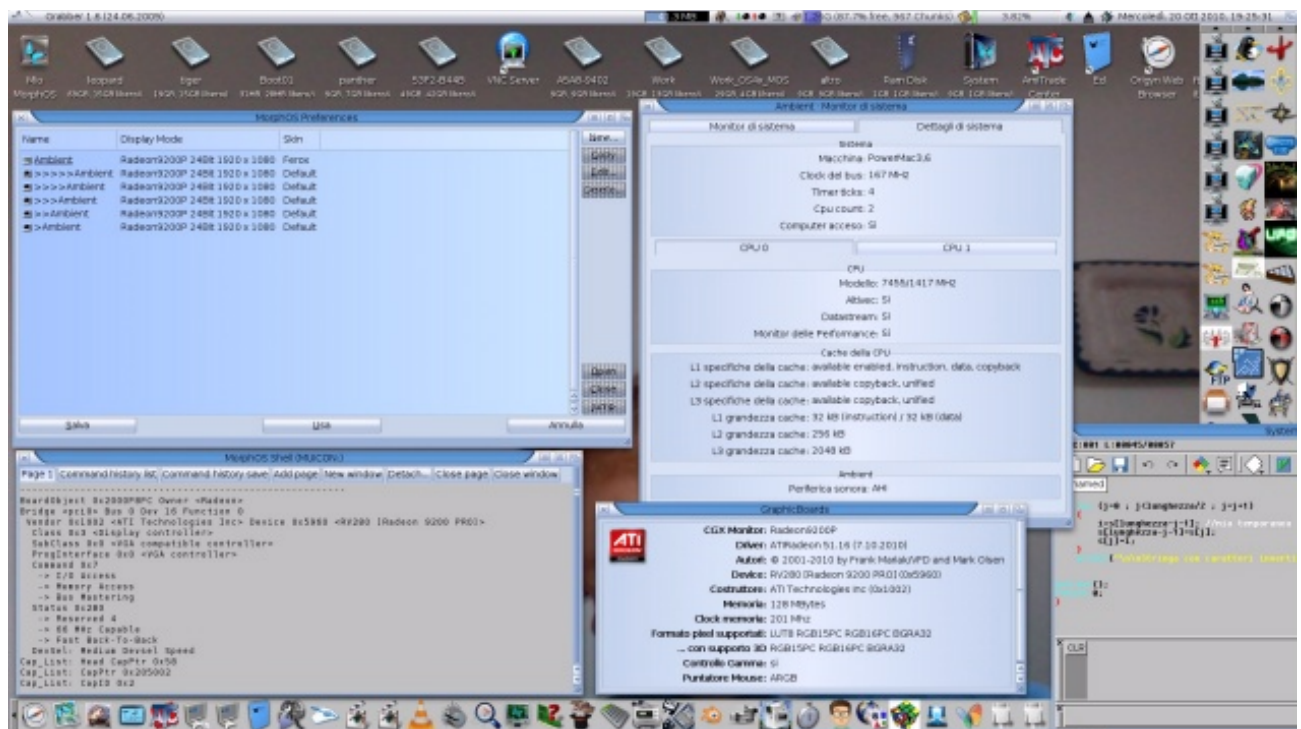
## OS9.2.x

PowerMac G4 AGP MDD, FW800 and PowerMac G5 AGP are not OS9.2.x compatible. For the other, download the following package:

<http://www.applemacanix.info/9200os9/9200os9.sit>

dearchive it and install it (a proper extension will be added).  
When finished, reboot the computer.

- 14) ENJOY WELL-DESERVED your PowerMac with MorphOS, Linux, OSX, OS9 and/or Aunt Lina OS!!** 😊



You can see some 3D benchmarks of a ATI Radeon 9250 AGP used under MorphOS and OSX in this thread:

<http://viewtopic.php?f=40&t=13185>

## End notes:

### ● Ps1

It is possible to use a PowerMac G4 AGP with PCI Macintosh for flashing the AGP x86 PC graphic card, using the utility "Graphiccelerator I" (NOT version II!), though the operation is more complex to perform:

<http://thomas.perrier.name/graphiccelerator.html>

### ● Ps2

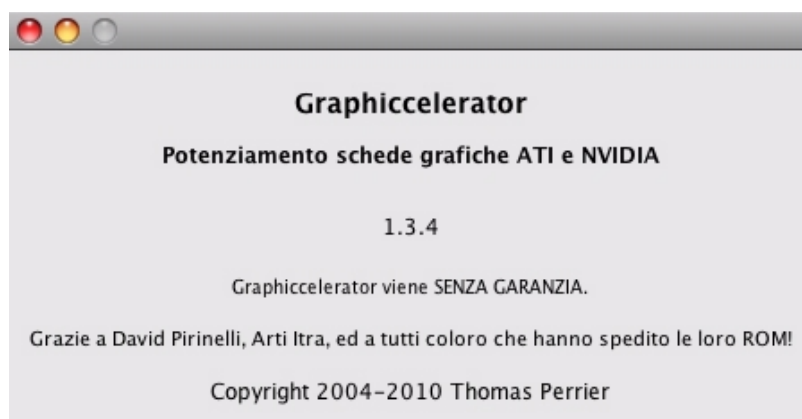
It is possible to use "Graphiccelerator I" (NOT version II!) to upgrading/flashing a Mac ROM with another Mac ROM:

<http://thomas.perrier.name/graphiccelerator.html>

### ● Ps3

It is possible to use "Graphiccelerator I" (NOT version II!) to change operative frequencies of AGP ATI Radeon (increasing clock speed, for example):

<http://thomas.perrier.name/graphiccelerator.html>



## ● Ps4

This guide shows the method for flashing Macintosh ROM not only for ATI Radeon 9200/9250 graphic cards but is partially applicable to other models, like 8500/9000/9100/9700/9800... For further details and specific procedure due to upgrade or flash other graphic cards, see this link:

<http://themacelite.wikidot.com>

You can find a list of graphic cards actually supported under MorphOS 2.6 here:

<http://morphos.de/hardware.html>

Guide released by Divina and translated in English by Jambalah.  
Forgive any language or grammatical mistake..  
Read carefully the guide and the references you find in the web links  
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