# Information for SiS Users

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## 1. Introduction

This driver was primarily written for the SiS6326 and SiS530 by Alan Hourihane. It also works on 5597/5598 chips, and probably on older SiS862X5 family.

The driver supports :

- Linear Addressing
- 8/15/16/24 bits per pixel
- Fully programmable clocks are supported
- H/W acceleration and cursor support
- XAA support (XFree86 Acceleration Architecture)

## 2. XF86Config Options

The following options are of particular interest for the SiS driver. Each of them must be specified in the Device section of the XF86Config file for this card.

Option "SetMclk"
: This option lets you to modify the memory clocking of your card. (only for 5597 and 6326) Modifying the memory timings can destroy the device, but usually the only ill effects of overclocking is to have some noise an drawing errors, but BE CAREFUL. Usually a little increment can improve the drawing speed, and allows also higher dotclocks. The server reports default memclock on starting messages, so take it as a base. Units are in KHZ.

Option "DacSpeed"
: This option lets you to modify the maximum allowed dotclock).

Option "sw_cursor", "hw_cursor"
: The default is for using the hardware cursor.

Option "Turboqueue"
: 5597/8 and 6326 have the option to extend the engine command queue on VRAM. With extended queue length, the driver only checks queue status on some color-expansion commands. This gives some performance improvement, but is possible to lose some commands, corrupting screen output. As the size of extended command queue is 16-32K, the probability is very low, but exists. The performance gain observed is around 8-10%. Currently, using this option will occasionally freeze the acceleration engine, causing weird image display.

Option "FastVram"
: Enables 1 cycle memory access. Try it. Increased memory bandwidth reduces the possibility of glitches and noise on high resolution modes.

Option "PciRetry"

Option "NoAccel"
: Disables various hardware accelerations.

VideoRAM size
: The SiS chips can only directly address 4096K bytes of video RAM. Some video cards using these chips are shipped with additional video RAM. The videoRAM must be explicitly limited to 4096 for those cards. Attempting to use the additional RAM leads to a variety of scrambled screen artifacts.

# 3. Modelines

When constructing a modeline for use with the Sis driver you'll need to consider several points:

- H/W Acceleration. The H/W cursor, and fill operations currently allocate memory of the video ram for there own use. If this is not available these functions will automatically be disabled. Also, Turboqueue allocate 32k of Vram.
- Dot Clock. SiS documents the following video modes to work with 6326. The max dot clock allowable for your 6326 based board depends also on the memory installed on it. Option FastVram can be needed for high dot clocks to work. Of course, the memory installed must allow 1 cycle R/W.

  SiS recommended video modes for 6326:

  640x480 :
  : 4, 8, 15, 16, 24 bpp at 85Hz Non-interlaced

  800x600 :
  : 4, 8, 15, 16, 24 bpp at 85Hz Non-interlaced

  1024x768 :
  : 4, 8, 15, 16, 24 bpp at 85Hz Non-interlaced

  1280x1024 :
  : 4, 8, 15, 16, 24 bpp at 75Hz Non-interlaced

  1600x1200 :
  : 4, 8 bpp at 65Hz Non-interlaced

# 4. Troubleshooting

Some video modes with high dot-clocks don't work at all, resulting on black screen. Lowering dotclock in that case could solve the problem.

Document based on 3.3 version written by Xavier Ducoin.

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$XFree86: xc/programs/Xserver/hw/xfree86/doc/sgml/SiS.sgml,v 3.7 2000/03/06 22:59:24 dawes Exp $