



## Voodoo4 and Voodoo5 FAQs

This page provides general support information for the Voodoo4 (V4) and Voodoo5 (V5) families of products, and the VSA-100 graphics chip and its features.

1. [What is the difference between the V4 and V5?](#)
2. [How will the Voodoo4 perform compared with the Voodoo3?](#)
3. [What are the minimum system requirements needed to support Voodoo4 and Voodoo5 products?](#)
4. [Is the memory on the Voodoo5 boards unified or segmented? For example, on the Voodoo5 5500 AGP with two VSA-100 chips with 32MB of memory per chip, is the video memory 64MB or is it really just 32MB?](#)
5. [Will you make a PCI version of any of the cards?](#)
6. [How many SKUs will be released of each family?](#)
7. [What are the Voodoo4 and Voodoo5 price ranges?](#)
8. [Why did you decide not to have TV-out support in any of the V4 and V5 products?](#)
9. [Will there be any revisions made to the Glide with Voodoo4 and Voodoo5?](#)
10. [Can I put two 2-way boards in a system? How about two 4-way boards?](#)
11. [I understand that V4 and V5 have DVD Hardware Assist. I currently have a DVD Hardware Decoder card. When I purchase a V4 or V5, will I be able to remove the original DVD Decoder card and play DVD movies directly through the V4 or V5 card?](#)

## VSA-100 Graphics Chip

12. [Is VSA-100 the same as Napalm?](#)
13. [What is the VSA-100 chip?](#)
14. [What is the difference between Voodoo3 and VSA-100?](#)
15. [Is this the new architecture you have been promising, or another derivative of the Voodoo graphics architecture?](#)
16. [Will you have software T&L support?](#)
17. [Will the VSA-100 support 3Dnow, Linux and BeOS?](#)
18. [What is the fill rate on the single chip solution? SLI? 4-Way?](#)
19. [Do you expect any supply limitations with Voodoo4 or Voodoo5 like you had with Voodoo3, and especially the 3500TV?](#)
20. [Will you do a version of the VSA-100 that has a tuner like the Voodoo3-3500TV?](#)
21. [Will you have HDTV support?](#)
22. [Will you be speed grading the VSA-100 chips like you did with Voodoo3?](#)

23. [What will the clock speeds of the configurations be?](#)
24. [Are the memory and processor clocks synchronous?](#)
25. [Why did you decide to go with the type of SDRAM instead of a higher performing memory type on the board?](#)
26. [Will any of the boards ship with a fan?](#)
27. [Can you overclock Voodoo4 or Voodoo5?](#)
28. [Do you have full AGP 4x support in the VSA-100? If not, why not?](#)
29. [Does the VSA-100 support AGP execute mode and side banding?](#)

## Real-Time Full-Scene HW Anti-Aliasing (FSAA) and T-Buffer™ Digital Cinematic Effects

30. [Can the single VSA-100 \(Voodoo4\) board do the T-Buffer Digital Cinematic Effects?](#)
31. [Do the Voodoo5 products \(5000, 5500, 6000\) perform the T-Buffer effects and FSAA at the same time?](#)
32. [Is there a performance penalty?](#)
33. [Can the Voodoo5 6000 \(4-way SLI\) board do the T-Buffer effects and FSAA at the same time?](#)
34. [FSAA doesn't matter at high resolutions – does it?](#)
35. [Does your FSAA and T-Buffer technology cause performance hits?](#)
36. [Does the Motion Blur T-Buffer effect in Quake 3 increase your target area?](#)

## Macintosh (Mac PCs)

37. [Will the VSA-100 have Mac support?](#)
38. [Will 3dfx ever sell and support a Mac product?](#)
39. [How about SLI support for the Mac?](#)

### 1. What is the difference between the V4 and V5?

The Voodoo4 and Voodoo5 are 3dfx board product families. The Voodoo4 family includes a single 3dfx VSA-100 graphics processor. The Voodoo5 products contain two (2) or four (4) VSA-100 graphics processors on a single board.

### 2. How will the Voodoo4 perform compared with the Voodoo3?

The single-chip Voodoo4 boards will, clock for clock, significantly out-perform Voodoo3. Here's why. Voodoo4's VSA-100 engine renders two pixels per clock for single-texture content, whereas Voodoo3 only renders one pixel per clock. Also, we've made the basic 3D rasterizer more up to 20% more efficient. The VSA-100's texture compression will help performance tremendously in games that use compressed textures. These improvements, when combined with some other fundamental enhancements like all of the important DirectX6 and DirectX7 texture combines, new alpha blends, and guardband clipping to offload the CPU, lead to what could be a 100% performance improvement in a lot of situations.

3. **What are the minimum system requirements needed to support Voodoo4 and Voodoo5 products?**

Any of the Voodoo4 and Voodoo5 products require only Pentium MMX-200MHz or higher CPU and a CD-ROM drive.

4. **Is the memory on the Voodoo5 boards unified or segmented? For example, on the Voodoo5 5500 AGP with two VSA-100 chips with 32MB of memory per chip, is the video memory 64MB or is it really just 32MB?**

The video memory is unified, only texture data has to be repeated for each VSA-100 chip.

5. **Will you make a PCI version of any of the cards?**

Definitely. The Voodoo4 4500 and Voodoo5 5000 have PCI versions, and we may create more. There are still a lot of serious gamers who use PCI. In addition with all of the new OEM systems being shipped with integrated North Bridge chipsets, like the Intel i810, which does not have an AGP slot, we see the need for PCI graphics boards remaining strong in the retail market.

6. **How many SKUs will be released of each family?**

We will be releasing two SKUs for Voodoo4 (4500 AGP/PCI) and three for Voodoo5 (5000 PCI, 5500 AGP, 6000 AGP) in the U.S. Retail market.

7. **What are the Voodoo4 and Voodoo5 price ranges?**

The Voodoo4 4500 AGP/PCI will cost approximately \$179.99. The Voodoo5 5000 PCI will cost approximately \$229.99. The Voodoo5 5500 AGP will cost approximately \$299.99. The Voodoo5 6000 will cost approximately \$599.99.

8. **Why did you decide not to have TV-out support in any of the V4 and V5 products?**

We looked carefully at end-user data and very, very few end-users want to play PC games on a TV. The higher resolution capability of monitors outweighs the larger TV size for our end users.

9. **Will there be any revisions made to the Glide with Voodoo4 and Voodoo5?**

No revisions were necessary. V4 and V5 products are compatible with all existing Glide titles and will support Glide 2.x and 3.x.

10. **Can I put two 2-way boards in a system? How about two 4-way boards?**

No, not for the consumer market applications. VSA-100's SLI enables multiple chips on a single board to operate in parallel but does not easily provide for multiple boards. Quantum3D's AAlchemy visual simulation products utilize a standard PCI bridge and board design to enable multiple VSA-100 boards to operate together. Also, our systems contain a special power supply to power AAlchemy. Overall, it's a great solution but a bit too expensive for the mainstream consumer market.

11. **I understand that V4 and V5 have DVD Hardware Assist. I currently have**

**a DVD Hardware Decoder card. When I purchase a V4 or V5, will I be able to remove the original DVD Decoder card and play DVD movies directly through the V4 or V5 card?**

Yes, on two conditions: you must also have a software DVD player such as Intervideo's WinDVD™ and a CPU of 266MHz or higher to get acceptable DVD quality.

## **VSA-100 Graphics Chip**

**12. Is VSA-100 the same as Napalm?**

Yes.

**13. What is the VSA-100 chip?**

The VSA-100 chip is the latest silicon chip that is part of both the Voodoo4 and Voodoo5 product families. Formally known as the Napalm, this chip has a scalable architecture and additional features such as the T-Buffer™ Digital Cinematic Effects, FXT1™ Texture Compression and Real-Time Full-Scene HW Anti-Aliasing.

**14. What is the difference between Voodoo3 and VSA-100?**

The VSA-100 is everything that Voodoo3 is plus: AGP 4x, 64MB frame buffer, 32-bit RGBA rendering, 32-bit textures, 24-bit Z & W buffers, 8-bit stencil, 2Kx2K textures, FXT1™ Texture Compression, SLI support for Real-Time Full-Scene Anti-Aliasing (FSAA) and the T-Buffer™ Digital Cinematic Effects... all in hardware.

**15. Is this the new architecture you have been promising, or another derivative of the Voodoo graphics architecture?**

The VSA-100 is based on the Voodoo graphics architecture and incorporates a multitude of new features, enhancements, optimizations and technology. These include Full-Scene Anti-Aliasing (FSAA), T-Buffer™, FXT1™, 32-bit color, 64MB memory, 2K X 2K textures, etc. See our Voodoo4 and Voodoo5 product sections for comprehensive lists of features and benefits.

**16. Will you have software T&L support?**

Voodoo4 and Voodoo5 have software T&L support.

**17. Will the VSA-100 support 3Dnow, Linux and BeOS?**

Yes, Yes and Yes.

**18. What is the fill rate on the single chip solution? SLI? 4-Way?**

The single chip VSA-100 is 333-367 Megapixels/sec – the 2-way SLI is 667-733 Megapixels/sec - the 4-way SLI is 1.33-1.47 Gigapixels/sec.

**19. Do you expect any supply limitations with Voodoo4 or Voodoo5 like you had with Voodoo3, and especially the 3500TV?**

No.

20. **Will you do a version of the VSA-100 that has a tuner like the Voodoo3-3500TV?**

We do not plan on announcing a VSA-100 product with a tuner. We expect the 3500 TV to continue to be an outstanding multimedia solution.

21. **Will you have HDTV support?**

HDTV is an important coming technology for the PC. We don't have any details on product support to date.

22. **Will you be speed grading the VSA-100 chips like you did with Voodoo3?**

We expect good yields at high speeds for the VSA-100, therefore we don't have plans to speed-bin the parts.

23. **What will the clock speeds of the configurations be?**

The final clock speeds will depend on memory prices and what we see with the actual silicon. The possible range is 166MHz to 183MHz.

24. **Are the memory and processor clocks synchronous?**

Yes, there's a single clock memory and core clock.

25. **Why did you decide to go with the type of SDRAM instead of a higher performing memory type on the board?**

SDR SDRAM is cost-effective, highly available and presents no technology risks. SLI (Scan-Line Interleave) and SDR SDRAM together give us higher memory bandwidth than any competing product, making SDR SDRAM an easy choice.

26. **Will any of the boards ship with a fan?**

Voodoo5 products will ship with fans. We're actually right on the borderline of needing and not needing a fan, but we want to play it safe.

27. **Can you overclock Voodoo4 or Voodoo5?**

Any component that has a clock, can be overclocked. However, with Voodoo4 and Voodoo5, the performance is so superior that there is no need to overclock. We guarantee stability at the shipped clock rate.

28. **Do you have full AGP 4x support in the VSA-100? If not, why not?**

We support AGP 4x, but we do not support execute mode.

29. **Does the VSA-100 support AGP execute mode and side banding?**

The VSA-100 does support side-bands, but does not support execute mode. Execute mode has been proven to give minimal performance benefits and we decided it wasn't worth the time, cost or risk.

## **Real-Time Full-Scene HW Anti-Aliasing (FSAA) and**

## T-Buffer™ Digital Cinematic Effects

30. **Can the single VSA-100 (Voodoo4) board do the T-Buffer Digital Cinematic Effects?**

No.

31. **Do the Voodoo5 products (5000, 5500, 6000) perform the T-Buffer effects and FSAA at the same time?**

Yes. The Voodoo5 products are capable of doing any combination of FSAA and the T-Buffer effects.

32. **Is there a performance penalty?**

Because multiple rendering passes are required to do T-Buffer effects and full-scene AA simultaneously, there is a performance hit that increases as more simultaneous effects are enabled.

33. **Can the Voodoo5 6000 (4-way SLI) board do the T-Buffer effects and FSAA at the same time?**

Yes. It's the same situation as the 2-way board.

34. **FSAA doesn't matter at high resolutions – does it?**

You can see from our demos, which are all run at 1024x768 resolution, that FSAA makes a huge difference. The difference is noticeable even at 1600x1200, but you know that very few gamers have systems that support that resolution at this time.

35. **Does your FSAA and T-Buffer technology cause performance hits?**

The real question concerning gamers is whether they can run their favorite titles at real-time frame rates, like 60fps, with features turned on. So, applications will run at real-time frame rates at 32bpp with FSAA turned on, and they will run even faster with FSAA turned off.

36. **Does the Motion Blur T-Buffer effect in Quake 3 increase your target area?**

No .

## Macintosh (Mac PCs)

37. **Will the VSA-100 have Mac support?**

With the VSA-100, we took into account many of the features for the Macintosh market. To date we have not announced a Mac-based product, however we have announced a PCI version of Voodoo4 and Voodoo5, which will work with 3dfx's Mac drivers.

38. **Will 3dfx ever sell and support a Mac product?**

The company has Mac drivers and PCI Voodoo products. We have not disclosed our Mac strategy.

39. **How about SLI support for the Mac?**

SLI is applicable to any platform including PCs, Mac and Linux.



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