XGI Product Brochure Volari™ Duo Graphics Solution

World's First Dual DX9 Graphics Solution

Introduction

For the first time in gaming history, you can harness the brute force of true, dual GPUs on a single, DX9 Compliant board. Volari Duo takes on the task of graphics processing with twice the firepower of other graphics cards, blowing away 3D benchmark challenges like a pair of 9 millimeters. Enjoy the crisp clarity of independent frame rendering with a stunning increase in overall yield that will redefine what people expect from a GPU.

With an amazing 16 pipelines linked through a proprietary new bridge protocol, Volari™ Duo unleashes an avalanche of processing power that will leave the competition out in the cold.

©2003 DIGINOISE

True Hardware DirectX9

Both Volari Duo processors employ XGI's next generation TruShader™ 2.1 Engine, taking vertex and pixel shading to a new level of realism. Combine this with built-in DirectX9 programmability and highly efficient pixel pipelines, 3D environments now come alive with cinematic realism and movie-studio caliber graphics. Advanced developers can take advantage of the Volari Duo processor's fully programmable DirectX9 functions to deliver visual experiences never before seen on the PC.

Advanced Performance Features

BitFluent Protocol™

Volari raises the bar for the gaming industry with a revolutionary new method of graphics processing that shares workload between dual GPUs, delivering maximum efficiency without missing a beat. The result is a perfect harmony of co-processing that transforms a countless array of advanced 3D functions into a virtual symphony for the eyes.

Anything less bites the bit.

BroadBahn' Memory Architecture

BroadBahn™ Memory Architecture

Volari Duo processors take advantage of XGI's proprietary BroadBahn™ memory architecture, moving a staggering amount of data between the processor and graphics board memory. Leveraging sophisticated compression-based algorithms, BroadBahn™ architecture effectively doubles the amount of data flowing to and from the DRAM, optimizing 3D rendering, image processing and media streaming.
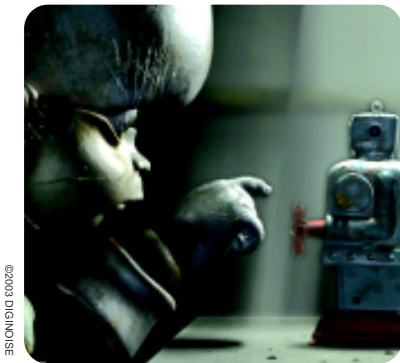
DDR/DDR2 Compatibility

Both Volari Duo processors supports both DDR and DDR2 memory providing flexible support for a variety of speed and performance application. With Volari Duo graphics solution you can link up to 512MB of DDR or DDR2 memory via a 256-bit memory interface for amazing graphics processing performance via a single chip.

V-Drive™

Not all processing environments are created equal.

The blistering demands imposed by full screen 3D applications will tax your GPU for all it's worth, leaving weaker processors in the dust. When it's time to pour on the muscle, V-Drive is like a short of pure adrenaline in the heat of the battle. V-Drive™ ratchets up processing power in perfectly timed response to computational demands, effortlessly delivering full frame graphics with flawless execution. Shift in to V-Drive™ and experience the ultimate in high speed performance.

Cipher
Powered   Original

Cinematic realism

Cipher™ Video Processor

Volari V8 processors feature XGI's legendary Cipher® video processor. Leveraging this advanced de-interlacing technology means video files play with a smooth, flicker-free and fluid motion that amazes even industry professionals. And unlike competing video processors, the Cipher™ video processor converts both incoming and outgoing video feeds, ensuring that all your videos are displayed with the highest possible on-screen quality.

ColorAmp™ Engine

Volari Duo Graphics Solution feature XGI's cutting-edge ColorAmp™ Engine - driven by a proprietary algorithm that analyzes on-screen environments and automatically optimizes color intensity and gamma levels to provide the most accurate on-screen color and display brightness.

Intelli-Vision™ Engine

The Volari's proprietary Intelli-Vision™ Engine makes calculated adjustments to display brightness when entering 3D mode, providing clearer and sharper graphics display performance ideal for today's 3D gaming.

Intelli-Vision™   Original
Powered

Reactor™ Unified Driver

Harness the superior power of the any Volari processor with XGI's Reactor™ unified driver. Packed with useful features and fully compatible with Direct3D and OpenGL APIs, the Reactor™ unified driver allows an advanced level of processor-tuning that easily meets the demands of today's avid gamers. The Reactor™ unified driver works across all graphics boards incorporating Volari V8 processors, making driver management virtually effortless.

Feature Packed Utility

ControlDeck™

ControlDeck™ software puts you at the dashboard of a comprehensive display control center. All Volari V8 series processors come complete with a host of power-user features that will please even the pickiest of display control-freaks. From a single interface users can manage powerful software programs including DesktopPlus™, PowerManager™, Rotech™, Navigator™ and many others!

Rotech™

For those of you who have a rotating monitor, you'll appreciate the dedicated functionality of Rotech technology. Unlike traditional monitor rotation software applications that hog CPU power, Rotech utilizes dedicated hardware functions to deliver the end result more efficiently, without bleeding your CPU dry, and that's not all. Because Rotech's functionality is integrated directly into the Volari chipset, you'll find that rotated images are crisper than ever before.

DesktopPlus™

Does your computer screen look like a literal minefield of icons and shortcuts? You could be suffering from "icon-overload". DesktopPlus™ cuts through the clutter by creating custom tailored desktop environments to fit the moment. When it's time for work, select your "Work-Zone" desktop option and the screen instantly morphs to display only the specific files and shortcuts that are relevant to your work. And when your work day is done, click on "Play Zone" and DesktopPlus™ will put all the work away, bringing your gaming programs right up front where you want them.

With intuitive user menus, you can set up a wide variety of "Zones" to match your own personal tastes. Just point, click and get into the zone!

Navigator™

Set yourself free from the limits of small monitor size, with Navigator from Volari™. Navigator™ boosts precious real estate on your desktop by zooming in on the areas you want to look at, while keeping you clearly oriented with a mini-navigator pop-up window. Just like a GPS map, you can zoom in on the landscape of your desktop giving the look and feel of more working

Volari™ Duo V8 Ultra Specifications

Blazing-fast PCI Bus Interface
- 32-bit PCI local bus standard Revision 2.2 compliant
- True AGP2.0 & AGP3.0 Compliant configuration setting
- Hardware auto detect for AGP1.0, AGP2.0 or AGP3.0
  mode support

Double Octa-pipe 3D Engine
- Extreme High performance 256-bit 3D engine
- High order surface tessellation
- Optimized hardware geometry transform/lighting/setup engine
- Total of 4 units of Vertex Shader with Fully compliant Direct3D 9.0 Vertex
  Shader ver. 2.0
- Total of 8 sets of Pixel Shader (2.0) with Fully compliant Direct3D 9.0 Pixel
  Shader ver. 2.0
- 16 sets high performance pixel rendering pipelines
- Supports Bump Mapping, Mipmapped Cubic Mapping and Volume Texture
  supports flat and Gouraud shading
- High quality anisotropic filtering
- Supports 2-side stencil.
- 2X/4X full scene anti-aliasing(FSAA)

Ultimate Performance 2D Engine
- Hardware command queue
- High-speed Direct Draw Accelerator
- Hardware GDI 2000 Accelerator
- Source read-buffer to minimize engine wait-state
- Built-in destination read-buffer to minimize engine wait-state

High Definition TV-OUT Solution with XV301
- PAL and NTSC Systems.
- Composite, S-Video, and Component RGB Output   Signals
- Macrovision Copy Protection Process Rev. 7.1.L1
- HDTV 480i/480p/1080i/720p YPbPr Output Signals.
- A single link TMDS transmitter with excellent scaling capability for TFT
  LCD panel display

MPEG-2 Video Decoder
- MPEG-2 MP@ML standards compliant
- Supports up to 20 Mbit/sec bit rate decoding
- True hardware VCD, DVD and HDTV decoding

Video Accelerator
- YUV-to-RGB color space conversion
- Bi-linear video interpolation with integer increments of 1/2048
- Complete graphics and video overlay function
- Hardware video decoder interface
- Independent VBI capture
- Supports DVD sub-picture playback overlay
- Built-in independent Gamma correction RAM

Proprietary Cipher Video Processor
- 5 fields per-pixel motion detection de-interlace function, video
  sources from MPEG decoder, Video capture and AVI interfaces.
- Down scaling function and scaling vector as 1/2, 1/4.
- Next generation de-interlaced and 1/2 down scaling function.

Display Memory Interface
- Supports DDR SDRAM, DDR-II SDRAM type to 256M Bytes memory

BitFluent Architecture (XGI Volari Duo Only)
- Advanced interface for dual GPU solution
- Up to 2.13GB bus bandwidth

High Integration
- Programmable 24-bit true-color RAMDAC up to 400 MHz pixel clock
- Built-in VIP interface
- VESA Plug & Display for PanelLink Interface
- Built-in Thermal Diode for GPU Security-Update

Miscellaneous
- Supports 32K/64K/128K Bytes ROM decoding
- Supports 20MHz SPI ROM interface 1140-balls 37.5mm x 37.5mm
  FC-BGA package

Volari™ Duo V5 Ultra Specifications

Blazing-fast PCI Bus Interface
- 32-bit PCI local bus standard Revision 2.2 compliant
- True AGP2.0 & AGP3.0 Compliant configuration setting
- Hardware auto detect for AGP1.0, AGP2.0 or AGP3.0
  mode support

Dual Quad-pipe 3D Engine
- Extreme High performance 256-bit 3D engine
- High order surface tessellation
- Optimized hardware geometry transform/lighting/setup engine
- Total of 4 units of Vertex Shader with Fully compliant Direct3D 9.0 Vertex
  Shader ver. 2.0
- Total of 4 sets of Pixel Shader (2.0) with Fully compliant Direct3D 9.0 Pixel
  Shader ver. 2.0
- Total of 8 sets high performance pixel rendering pipelines
- Supports Bump Mapping, Mipmapped Cubic Mapping and Volume Texture
  supports flat and Gouraud shading
- High quality anisotropic filtering
- Supports 2-side stencil.
- 2X/4X full scene anti-aliasing(FSAA)

Ultimate Performance 2D Engine
- Hardware command queue
- High-speed Direct Draw Accelerator
- Hardware GDI 2000 Accelerator
- Source read-buffer to minimize engine wait-state
- Built-in destination read-buffer to minimize engine wait-state

High Definition TV-OUT Solution with XV301
- PAL and NTSC Systems.
- Composite, S-Video, and Component RGB Output   Signals
- Macrovision Copy Protection Process Rev. 7.1.L1
- HDTV 480i/480p/1080i/720p YPbPr Output Signals.
- A single link TMDS transmitter with excellent scaling capability for TFT
  LCD panel display

MPEG-2 Video Decoder
- MPEG-2 MP@ML standards compliant
- Supports up to 20 Mbit/sec bit rate decoding
- True hardware VCD, DVD and HDTV decoding

Video Accelerator
- YUV-to-RGB color space conversion
- Bi-linear video interpolation with integer increments of 1/2048
- Complete graphics and video overlay function
- Hardware video decoder interface
- Independent VBI capture
- Supports DVD sub-picture playback overlay
- Built-in independent Gamma correction RAM

Proprietary Cipher Video Processor
- 5 fields per-pixel motion detection de-interlace function, video
  sources from MPEG decoder, Video capture and AVI interfaces.
- Down scaling function and scaling vector as 1/2, 1/4.
- Next generation de-interlaced and 1/2 down scaling function.

Display Memory Interface
- Supports DDR SDRAM, DDR-II SDRAM type to 256M Bytes memory

BitFluent Architecture (XGI Volari Duo Only)
- Advanced interface for dual GPU solution
- Up to 2.13GB bus bandwidth

High Integration
- Programmable 24-bit true-color RAMDAC up to 400 MHz pixel clock
- Built-in VIP interface
- VESA Plug & Display for PanelLink Interface
- Built-in Thermal Diode for GPU Security-Update

Miscellaneous
- Supports 32K/64K/128K Bytes ROM decoding
- Supports 20MHz SPI ROM interface 1140-balls 37.5mm x 37.5mm
  FC-BGA package