Millennium

DualHead®·2D·3D·DVD

G450

See more.
Do more.

- New Matrox G450 256-bit DualBus graphics chip integrates more features than ever before.

- Industry-defining 2D and 3D image quality and speed.

- DualHead Multi-Display will change the way you use your PC.

- Vibrant Color Quality[2] rendering brings photo-realistic color quality to all your applications.

- Hardware Environment-Mapped Bump Mapping brings 3D textures to life like never before.

- DualHead DVDMax lets you output DVD movies to your TV independent of your PC desktop.

- Lightning-fast 360 MHz RAMDAC and 32 MB of DDR memory.

- Comprehensive driver support.

matrox

The most awarded graphics card company. Worldwide.

www.matrox.com/mga

Incredibly sharp and realistic image quality

UltraSharp, lightning-fast RAMDAC
With a 360 MHz RAMDAC, the Millennium G450 provides high-quality analog output signals to ensure saturated colors and crisp text at resolutions as high as 2048 x 1536 @ 32-bpp.

Vibrant Color Quality² (VCQ²)
The Matrox-exclusive VCQ² architecture results in vibrant, artifact-free rendering of both single- and multi-textured polygons, bringing photo-realistic color quality to 3D environments.

Environment-Mapped Bump Mapping (EMBM)
Integrated hardware support for Microsoft® DirectX® EMBM adds a new level of visual realism to many 3D game environments.

More advanced 3D features
The Millennium G450 supports more advanced 3D features including stencil buffering, trilinear filtering, alpha-blending, anti-aliased vectors, vertex and table fogging, specular highlights, and a 32-bit Z-buffer to give you the best 3D quality in the industry.

Real-world productivity features

DualHead® display technology
DualHead display offers a host of options designed to meet your particular display needs. With 5 different combinations of VGA, analog flat-panel, and TV display devices, coupled with innovative features like Multi-Display, Zoom, DVDMax, Clone, and TV Output, DualHead promises to change the way you use your PC.

Powerful 2D and 3D acceleration

Matrox 256-bit DualBus
The 256-bit DualBus architecture gives you ultra-fast graphics acceleration, with true 32-bit color at high resolutions where other cards are weakest.
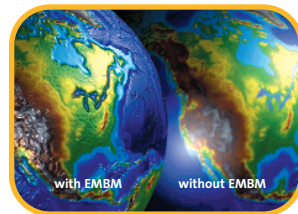
3D Rendering Array Processor
Powerful single-cycle multi-texturing and 3D rendering at up to 2048 x 1536 resolution forms the core of the Millennium G450's lightning-fast 3D performance.

Advanced AGP support
The Millennium G450 takes advantage of the massive throughput offered by AGP 2X / 4X to deliver fast texturing and data transfer.
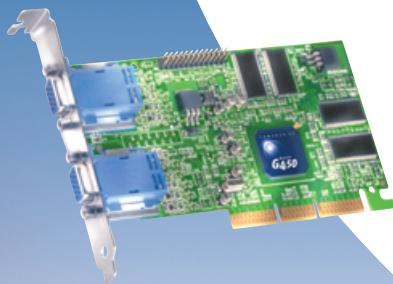
Vibrant Color Quality²

with EMBM without EMBM

Environment-Mapped Bump Mapping

Rollcage® Stage II
(Psygnosis® / Attention To Detail™)
with 3D Rendering Array Processor

The undisputed industry leader in 2D and 3D image quality, Matrox has created yet another winner. Offering a full suite of display options and a host of real-world productivity features, the Millennium G450 will change the way you work and play.

See more and do more with the Matrox Millennium G450.

Unprecedented
image
quality

State-of-the-art
DualHead®
display
gives you...

Matrox-pioneered DualHead display technology, introduced and made popular by the award-winning Matrox G400 Series, makes the Millennium G450 the most versatile and feature-rich graphics card on the market today. DualHead offers a host of display features and software utilities that will change the way you work and play on your PC.

DualHead Multi-Display

Extend your desktop over two displays.

Work : Access data from a spreadsheet while simultaneously preparing a business report in a word processor.

DualHead Zoom

Zoom in on any area of your desktop and view it full-screen on your second display.

Work : Examine a section of a photo-editing or CAD project in extreme detail.

DualHead DVDMax

Output full-screen DVD to your TV, independent of your main display.

Play : Watch a DVD movie on your TV while chatting with friends on your PC.

DualHead TV Output

Output your desktop to TV. Support for independent refresh rates keeps your primary display flicker-free.

Work : Output corporate presentations to a large second display.

DualHead Clone

Copy your desktop to a second display.

Play : Play your favorite 3D games on a big-screen TV.

F1 World Grand Prix
(Eidos Interactive®/Video System/Lankhor)

*The level of DualHead capability is determined by the operating system. Please refer to the Matrox Web site for more information.

"DualHead® display is the most powerful dual-monitor implementation we've ever seen."

- PC Magazine

More than 60 games support DualHead and / or Environment-Mapped Bump Mapping (EMBM), including...

Star Trek®: Armada
(Activision®/ Paramount Pictures™)
with **DualHead Multi-Display**

Destroyer Command™
(Mattel Interactive™/
Ultimation, Inc.)

with EMBM   without EMBM

What others are saying...

"...we consider the G450 an excellent choice for a business PC..."
-Jon Simon, SharkyExtreme

"When programming 8 hours a day, having a second monitor (plus the other DualHead features) is far more valuable than being able to play Quake 3 at 1600 x 1280."
-Eric Lizotte, GA Hardware

"...for the business market, the G450 is the top card."
-Chris Connolly, Game PC

"Matrox has always been the king of 2D image quality, and the G450 does nothing to change that title other than reinforce it."
-Anand Lal Shimpi, Anandtech

Software bundle

MICROGRAFX **Simply 3D³**   MICROGRAFX **Picture Publisher®**

Matrox Software
▶ **DVD Player**

System requirements	
System	AGP
RAM	16 MB
OS	Microsoft®
	Windows® Me
	Windows® 2000
	Windows 98
	Windows 95
	Windows NT® 4.0
	Windows XP
	Linux
	IBM®OS/2 Warp®
CD-ROM	✓

Matrox Millennium G450 specifications and features

0.18-micron technology :	Lower heat emission and power consumption
AGP 1X, 2X, 4X :	Compatibility with the newest chipsets and motherboards; transfer rates of up to 1 GB / sec.
Integrated TV encoder :	S-video and composite video TV output
Primary RAMDAC :	360 MHz for primary display at resolutions up to 2048 x 1536
Secondary RAMDAC :	230 MHz for secondary display at resolutions up to 1600 x 1200
Memory :	32 MB Double Data Rate (DDR)
UltraSharp DAC :	High-quality analog signal for crisp text and windows at the most demanding resolutions
3D rendering engine :	Full-featured 3D @ 2048 x 1536 in 32-bit color (16 million colors)
VCQ² rendering :	Eliminates artifacts and color banding in richly colored single- and multi-textured polygons
Supported 3D APIs :	OpenGL® and DirectX®
DualHead display :	Two independent displays powered by one chip, with a full range of configuration options (VGA monitor, analog flat-panel, and TV)
High-quality DVD playback :	Full-frame-rate DVD playback with superior image quality

Bulk products

Millennium G450 32MB DDR (G45FMDHA32DB)
Millennium G450 16MB DDR (G45+MDHA16DLXB)
Millennium G450 PCI 16MB DDR (G45FMDHP16DB)
Millennium G450 PCI 32MB DDR (G45FMDVP32DB)
Millennium G450 DVI 32MB DDR (G45FMLDVA32DB)*

* Low Profile form factor