High Performance Integrated 2D/3D Graphics and Video Accelerator

- 64-bit 2D/3D graphics engine
- Fully integrated TV output support
- AGP and PCI bus mastering support
- Digital output for connection to Macrovision® and video processors
- Supports SGRAM at 83 MHz and 1-cycle EDO DRAM at 66 MHz
- Integrated 170 MHz RAMDAC and clock synthesizer
- 3.3V/5V operation

S3d™ Graphics Engine

- High performance 2D acceleration
- Flat and Gouraud shading for 3D
- High quality 3D texture mapping
  - Perspective correction
  - Bi-linear and tri-linear texture filtering
  - MIP-Mapping
  - Depth cueing, fogging, alpha blending
  - Video texture mapping
  - Z-buffering

S3® Streams Processor™ Technology

- Supports on-the-fly stretching and blending of primary RGB stream and RGB or YUV (video) secondary stream
- Each stream can have different color depths
- High-quality video playback with horizontal and vertical interpolation
- Support for Indeo™, Cinepak™, and software and hardware-accelerated MPEG video
- Brightness, hue, saturation controls

S3 Scenic Highway™ Interface

- Supports industry standard video digitizers and MPEG decoders
- Odd/even field detection

Other Multimedia Support Hooks

- 24-bit digital YUV output port
- I²C serial communications bus
- 8-bit bi-directional feature connector

High-Performance Memory Support

- 64-bit 1-cycle EDO DRAM or SGRAM memory interface
- 2- or 4-MByte frame buffer

Non-x86 CPU Support

- Big endian/little endian byte ordering
- Relocatable addressing

Glueless PCI 2.1 Local Bus Support

66 MHz PCI and AGP Support

- Supports AGP DMA mode for highest performance 3D rendering
- Bus mastering for high performance video capture and display list processing
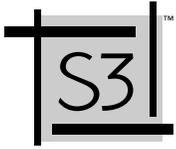
Full Software Support

- Drivers for major operating systems and APIs: [Windows® 95, Windows 3.11, Windows NT™, OS/2® 2.1 and 3.0 (Warp™), Direct 3D™, BRender™, RenderWare™, OpenGL™]
- Popular games supported with 3D acceleration
- ISV and marketing programs to ensure abundant title support
- Enhanced software available for enhanced ViRGE®/GX2 features.

Green PC/Monitor Plug and Play Support

- Full hardware and BIOS support for VESA Display Power Management Signaling (DPMS) monitor power savings modes
- DDC monitor communications

Extensive Static/Dynamic Power Management

328-pin BGA package

The S3 ViRGE/GX2 integrated 3D video/graphics accelerator enables compelling interactive entertainment, education, and presentation applications for the mainstream personal computing world.

Enhancements to the Popular ViRGE/DX & GX Accelerators

- Synchronous memory support up to 83 MHz
- Baseline AGP support with 66 MHz PCI bus
- TV output support with:
  - Integrated NTSC/PAL encoder
  - 3-tap flicker filter
  - Underscan compensation
- DuoView™ dual-display output to a TV and PC monitor
- 24-bit digital YUV port for connection to Macrovision and video processors

64-bit S3d Engine

The enhanced S3d Engine provides improved 2D acceleration for excellent Windows applications performance and a full-featured high-performance 3D rendering engine for realistic user experience in games and other interactive 3D applications.

Streams Processor

The S3 Streams Processor technology provides the stretching and YUV color space conversion features required for full screen video playback with both software CODECs and hardware MPEG sources. It allows simultaneous display of graphics and video of different color depths. This saves memory bandwidth and storage capacity while permitting higher frame rates.

The ViRGE/GX2 Streams Processor supports enhanced features such as vertical interpolation and color controls for high quality video playback.

S3 Scenic Highway

The S3 Scenic Highway allows low cost connection to industry-standard MPEG decoders and video digitizers.

AGP/PCI Bus Support

ViRGE/GX2 supports 66 MHz AGP DMA mode for the highest possible 3D rendering performance. By bus mastering texture data at over twice the speed of conventional PCI buses, AGP DMA reduces the amount of CPU overhead while improving 3D rendering performance. PCI bus master support maximizes video capture performance.

TV Output Support

The integrated TV encoder enables TV outputs of NTSC/PAL composite or S-video signals, providing flexibility for desktop computers. The 3-tap flicker filter used in the conversion of non-interlaced format to interlaced format as well as underscan compensation ensure excellent TV output quality.

DuoView™ Support

ViRGE/GX2 pioneers delivery of dual-display capability to the mainstream desktop. S3's innovative DuoView™ architecture allows simultaneous display of independent images on a TV and CRT. Each image can be displayed at its optimal refresh rate and resolution, allowing maximum display quality for each display type.

High Screen Resolution (Non-interlaced) Support

Resolutions Supported	DRAM/SGRAM Size	
	2 MB	4 MB
640X480X4	✔	✔
640X480X8	✔	✔
640X480X16	✔	✔
640X480X24	✔	✔
640X480X32	✔	✔
800X600X4	✔	✔
800X600X8	✔	✔
800X600X16	✔	✔
800X600X24/32	✔	✔
1024X768X4	✔	✔
1024X768X8	✔	✔
1024X768X16	✔	✔
1024X768X24 (IL)		✔
1280X1024X4	✔	✔
1280X1024X8	✔	✔
1280X1024X16 (IL)		✔
1600X1200X4	✔	✔
1600X1200X8	✔	✔