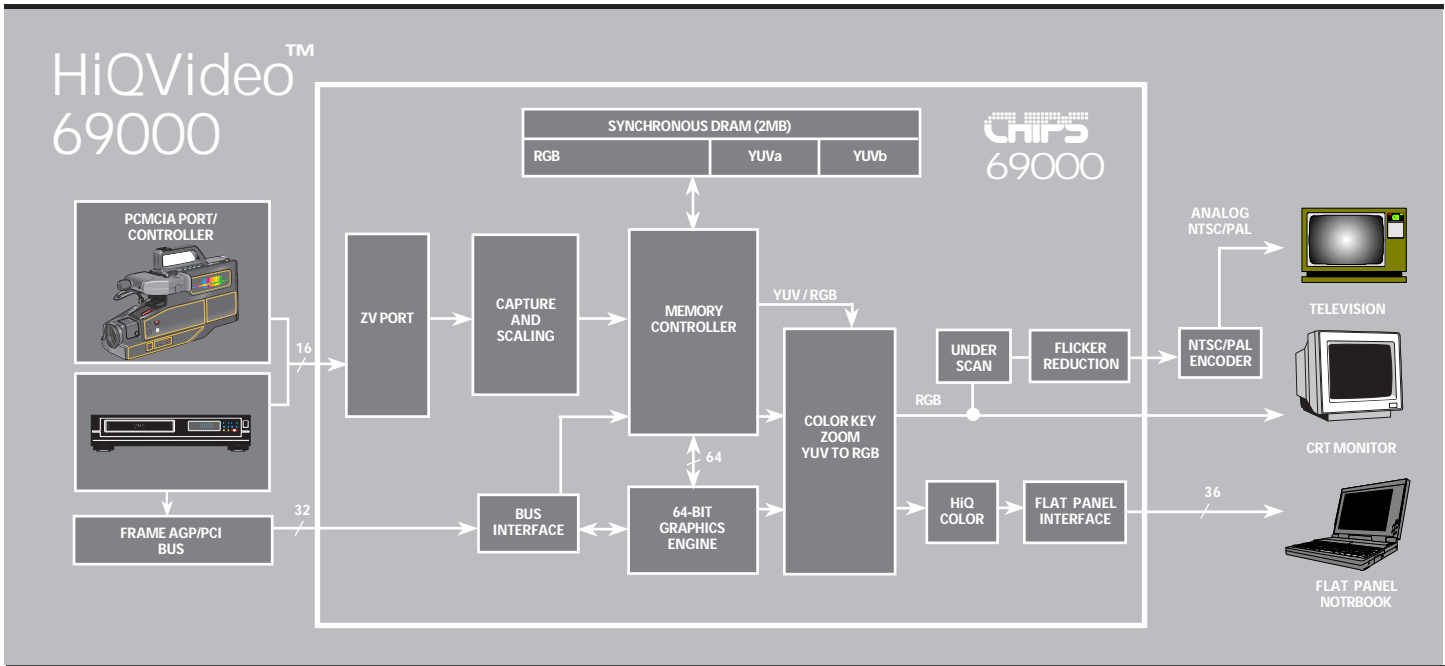


Product Overview



A SUBSIDIARY OF INTEL CORPORATION



Integrated SDRAM Memory

- 2MB integrated memory
- 83 MHz SDRAM operation

Low Power Consumption

HiQColor™ Technology

The 69000 uses CHIPS' proprietary TMED™ algorithm on STN displays to produce:

- 256 Gray Shades
- 16.7M Colors
- Reduced Motion Artifacts
- Crisper Display

Graphics Acceleration

- 64-bit Single Cycle BitBLT Engine
- System/Screen-Screen BitBLTs
- Transparent, Source, Destination BitBLT
- 256 3-Op Raster Operations
- Color Expansion
- Instant Full Screen Page Flip

Simultaneous Hardware Cursor and Pop-up Window

- 64x64 pixels by 4 colors
- 128x128 pixels by 2 colors

External LVDS and PanelLink Support for TFT and DSTN Panels

Multimedia Video Acceleration

- Zoom Video Port
- YUV/RGB data capture from video port or host bus
- Color Space Conversion (YUV-RGB)
- Horizontal and Vertical Interpolation
- Double Buffering
- Hardware Interrupt Support for VPE (Microsoft, Video Port Extension)
- Interlace/Frame/"Bob" Video Capture
- Color Key for Video Overlay

Industry-Standard Host Bus Interface Support

- Frame AGP
- PCI

Flexible Panel Support

- TFT, DSTN, SSTN, EL, Plasma
- Color and Monochrome
- VGA, SVGA
- XGA, SXGA
- 16:9 Aspect Ratio Panels, 1024x600
- Quarter VGA 320x240, 320x200
- Auto Panel Power On/Off Sequencing

NTSC/PAL TV Output Support

- Advanced Flicker Reduction Filter Circuitry
- Underscan Compensation

Microsoft PC97 and PC98 Compliant

Integrated Clock Synthesizers

- 135 MHz RAMDAC
- 83 MHz Memory Clock with PLL

Display Modes

- Up to 1280x1024 256 color @ 75Hz

Advance On-Chip Power Management

- Standby Mode
- Panel-off power-saving mode
- 0V Suspend
- 8 GPIO Pins
- Activity Detection Output Pin

Standards Support

- Fully IBM® VGA Compatible
- VESA DPMS and DDC 1/2
- Advanced Power Management
- ACPI

Accelerated Driver Support

- Windows 3.1, Windows 95, Windows 98, NT4.0, etc.
- CD-I, Video CD, Open MPEG

Other Features

- 3.3V Operation, 5.0V Tolerant Input
- 256-ball BGA Package
- 256-ball Mini-BGA Package

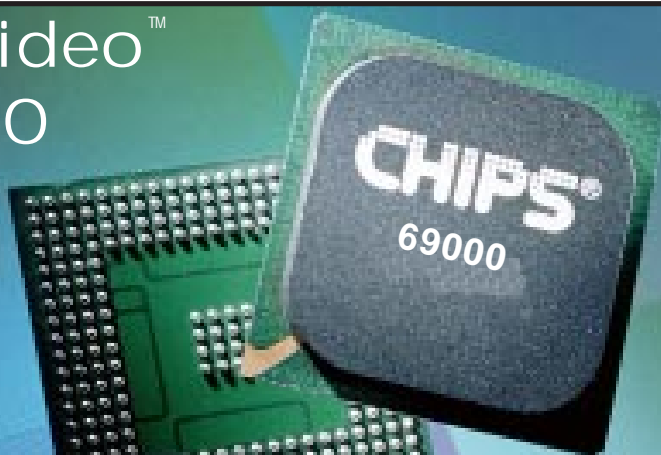
Ordering Information

Contact your CHIPS representative and ask for either part: B69000 (BGA) or M69000 (mini-BGA).

Chips and Technologies, Inc. a subsidiary of Intel Corporation

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HiQVideo™ 69000



The 69000 HiQVideo™ Accelerator with Integrated Memory

The 69000 extends CHIPS' HiQVideo Series of mobile graphics/video accelerated controllers by embedding 2 MBytes of high speed SDRAM memory into the chip.

High Performance Integrated Memory

The 69000 is the first member of the HiQVideo family to integrate high speed SDRAM frame buffer memory into the chip. Using leading edge embedded memory logic technologies, the 69000 integrates 2 MBytes of SDRAM into the chip. By embedding SDRAM and graphics controller logic on the same die, the 69000 delivers uncompromised performance and at the same time consumes much less power than the discrete solution. The integrated SDRAM supports up to 83MHz operation, which provides up to 664MBytes/second frame buffer bandwidth. The increase in the frame buffer bandwidth enables the 69000 to support high color, high-resolution graphics modes and real-time video acceleration.

Introduction

The 69000 is a highly integrated graphics/flat panel controller for notebooks, mini-notebook, industrial PC, and palmtop applications. By integrating 2MByte of SDRAM, graphics, flat panel, and CRT control logic on the same die, 69000 delivers superb 2D / video performance, consumes minimal power and at the same time reduces the PCB real estate for the graphics subsystem. The 2MByte embedded SDRAM is arranged in a 64-bit configuration. The 69000 supports both Frame AGP and PCI bus which enables a wide range of system platforms.

2D Acceleration for All Modes

The 69000 graphics engine is designed to enable high performance system platforms. The 69000 graphics engine boosts the 2D performance through specialized hardware, which accelerates the most frequently used 2D GUI operations. These operations include color expansion, system-to-screen BitBLT, screen-to-screen BitBLT, transparent source/destination BitBLT, rectangle fill, and 256-3Op raster operations. 2D acceleration is supported in all graphics modes up to 1280x1024 and all color depth up to 24-bit/color.

Multimedia Video

The 69000 implements a variety of features to deliver high quality, full-screen, full frame-rate and video capture playback for MPEG1, MPEG2, V-CD and DVD.

The 69000 supports a wide range of video string input format by supporting frame, interlaced, and Bob video capture modes. The 69000 supports both RGB or YUV video string capture from either Frame AGP/PCI bus or ZV port. For YUV video string input, the color space converter converts the data to 24-bit RGB data on the fly without loading up the frame buffer bandwidth and without saving the converted data into the frame buffer for later retrieval. To improve video playback quality, the 69000 continuously scales video data with horizontal and vertical interpolation. Double buffering is provided to eliminate video tearing as resulted from displaying an unfinished captured frame or field. To enable VPE kernel transport mode and video capture/playback auto-flipping the 69000 provides a hardware

interrupt pin, which can be programmed to activate at either display vertical sync or video capture vertical sync signal.

A PC-Card Zoom-Video port is implemented which allows a direct connection to PC-Card video string decoders. This enables full frame-rate video capture of MPEG1, MPEG2 and DVD contents without increasing bandwidth loading on PCI or Frame AGP bus.

Flexible Host Bus Support

The 69000 provides glueless interface for both PCI and Frame AGP host busses which enable a wide range of system platform applications. The PCI interface is fully compliant with PCI 2.1 specifications. All I/O registers and frame buffer addresses can be relocated to any system address. Memory mapped I/O access is also supported. By supporting the Frame AGP bus the 69000 improves both the graphics subsystem and the overall system performance. The Frame AGP interface is fully compliant to AGP2.0 specifications.

Footprint / Package

The 69000 is offered in two package formats. The B69000 is footprint compatible with the B65555 and B65554. It is a 27mmx27mm, 256-ball (BGA) package. The M69000 is a 17mmx17mm, 256-ball (mini-BGA) package and is suited for palmtop, mini-notebook, or other applications where PCB real estate is critical.

Versatile Panel Support

The 69000 supports a wide variety of color and monochrome SS, DSTN, TFT, EL and Plasma panels. Using HiQColor technology, up to 16.7M colors can be displayed on passive DSTN panels. Up to 16.7M colors can also be supported with 24-bit TFT panels.

Integrated SDRAM • Low Power Consumption • TMED Algorithm • 16 Million Colors • PCI/Frame AGP • 24bpp Color Support • Flicker Reduction Circuitry • PC97-98 Compatible • 36-bit Direct Panel Interface • Mini-BGA