WinSystems®

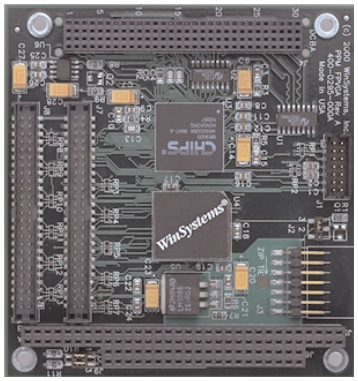
PC/104-*Plus* MODULE

PPM-FPVGA SVGA Video and Flat Panel Controller

FEATURES

- High-resolution CRT and flat panel controller with hardware Windows accelerator
- Integrated high-performance SDRAM memory
- Supports simultaneous CRT and LCD operation
- Flat panel display resolutions and color depth
  - 640x480 x 24bpp
  - 800x600 x 24bpp
  - 1024x768 x 16bpp
  - 1280x1024 x 8bpp
- Flexible panel support with up to 36-bit interfacing for monochrome and color panels including
  - Active matrix LCD TFT
  - Dual Drive (DD) passive STN
  - Single-panel, Single-drive (SS)
  - EL panels
  - Plasma panels
- Power sequencing to control the bias voltage and backlight inverter for panels
- Supports 16:9 aspect ratio panels
- CRT support with triple 8-bit RAMDAC
- Hardware and BIOS compatible with VGA standards
- Onboard EPROM with video BIOS
- PC/104-Plus bus interface with Burst Mode capability
- Single +5V supply
- Operates -40°C to +85°C

WinSystems' PPM-FPVGA is a PC/104-*Plus*-compliant flat panel and CRT video controller. It is based upon the Asiliant 69000 HiQVideo™ controller that is supported by a wide range of operating systems including Windows 98, Windows NT, Windows CE, VxWorks, DOS, and Linux.



FUNCTIONAL CAPABILITY

PC/104-*Plus* Interface - The PPM-FPVGA module is designed to offer high-performance video capability. It supports 32-bits of addressing and data, as well as the complete control interface for the PC/104-*Plus* bus. The chip has a PCI bus interface that will operate at 33 MHz. Jumper plugs select the module's slot position.

There is also a PC/104 connector on the board. No power, control or data signals are wired to it. It simply feeds the signals through the connector to the next module in a stack.

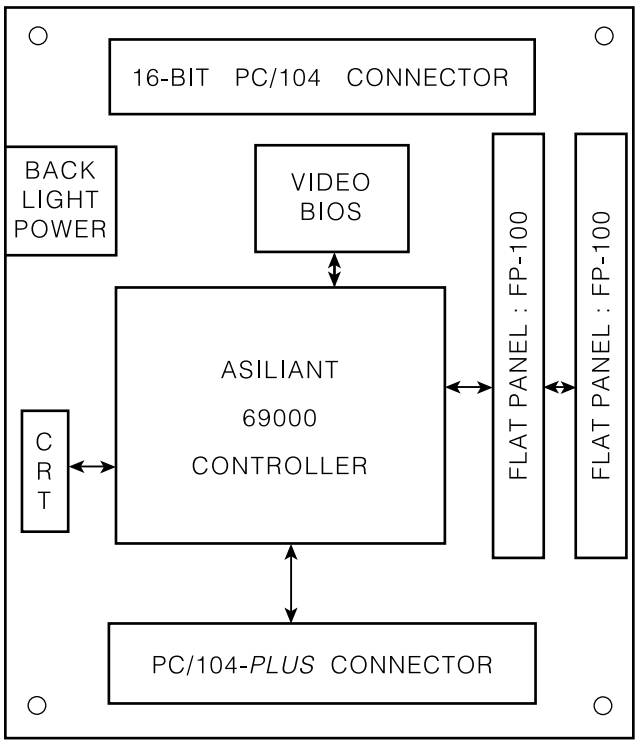
Video Controller - An Asiliant 69000 high-performance PCI flat panel/CRT controller provides a sophisticated graphics accelerator video engine. It supports a wide variety of monochrome and color active and passive LCD panel displays. It can support up to 16.7M colors on 24-bit, active matrix LCDs. Programmable horizontal and vertical stretching capabilities are also available for text and graphics modes for optimal display on 800x600, 1024x768 and 1280x1024 panels. It also has support for 16:9 aspect ratio panels.

Resolution	Color (bpp)	Refresh Rate
640 x 480	8	60, 75, 85
640 x 480	16	60, 75, 85
640 x 480	24	60, 75, 85
800 x 600	8	60, 75, 85
800 x 600	16	60, 75, 85
800 x 600	24	60, 75, 85
1024 x 768	8	60, 75, 85
1024 x 768	16	60, 75, 85
1280 x 1024	8	60

Two Megabytes of video memory is on the chip which is sufficient to support the screen resolutions and maximum number of colors displayed required by most applications.

As an option, the PPM-FPVGA module can be supplied with the Asiliant 69030 controller. This controller has 4MB of internal video RAM rather than the standard 2MB that is integrated into the 69000 controller. More memory permits more color depth at higher resolutions. Contact a factory application engineer for more details.

CRT Video Interface - A triple 8-bit integrated RAMDAC provides CRT support. The CRT video output signals are wired to a 14-pin dual-in-line connector at the edge of the board. An optional CBL-234-1 interface cable adapts it to a standard female 15-pin "D-Sub" type



PPM-FPVGA BLOCK DIAGRAM

connector commonly used for VGA. Simultaneous operation of the CRT and LCD is supported.

Flat Panel Display Support - The PPM-FPVGA supports most flat panel display technologies including plasma, electroluminescent (EL), active matrix TFT/MIM LCD, passive STN and Single-panel, Single-drive (SS). It will support mono and color displays. The board properly sequences the power for logic voltage and the backlight inverter to provide intelligent and safe power sequencing to the panel.

FP-100 Interface - Since there is not an electrical or mechanical interface standard for flat panels, WinSystems has developed a flat panel interface system configuration to work with the different interface signals, timing requirements, and connectors that vary between panel technologies and suppliers. The FP-100 video bus supports panels up to 24-bits per pixel. It has power, timing and control signals for various panel types. The logic levels are 3.3 volts but are 5.0V tolerant. Also, 4 lines are assigned to allow the PPM-FPVGA to read an ID jumper setting on the personality module or cable to auto configure the BIOS for the correct panel type. Two, 50-pin, 2-mm connectors are used for the flat panel interface. Most connections can be made directly with a modified cable, others will require a flat panel adapter module. Contact a WinSystems' factory application engineer with your specific panel requirements.

Software drivers are available with high-resolution drivers for various software packages including Linux, DOS, Windows 98/CE/NT, and certain RTOS applications. The video BIOS in the onboard EPROM provides PC video compatibility for the various modes of operation for the different panels. Video BIOS modifications can be made for custom panel types.

Related Controller Information - To get Asiliant's latest 69000 family data sheets, technical manuals, driver support or other product information, visit www.asiliant.com.

SPECIFICATIONS

Electrical

Bus interface:	32-bit PC/104-Plus PCI Bus
Memory:	2 Megabytes (internal to controller)
Display Output:	Analog CRT and digital flat panel

Power Requirements

Vcc = +5V ±5% @ 300 mA typical

Mechanical

Dimensions:	3.6" x 3.8" (90mm x 96mm)
Weight:	3.0 oz. (84 gm)

Connectors

CRT:	14-pin, 2mm shrouded header
Flat Panel Interface:	Two, 50-pin 2mm polarized headers
Backlight:	7-pin, 0.100" Molex polarized header
PC/104-Plus:	120-pin (4 x 30; 2mm) stack through with shrouded header
PC/104:	16-bit stackthrough (feed through only)

Environmental

Operating Temperature: -40°C to +85°C
Non-condensing relative humidity: 5% to 95%

ORDERING INFORMATION

PPM-FPVGA	PC/104-*Plus* video module
CBL-234-1	CRT adapter cable to 15-pin D-Sub

WinSystems® Inc.

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