

VME-IGP

High Resolution Color Graphic Processor

Intelligent Graphic Controller

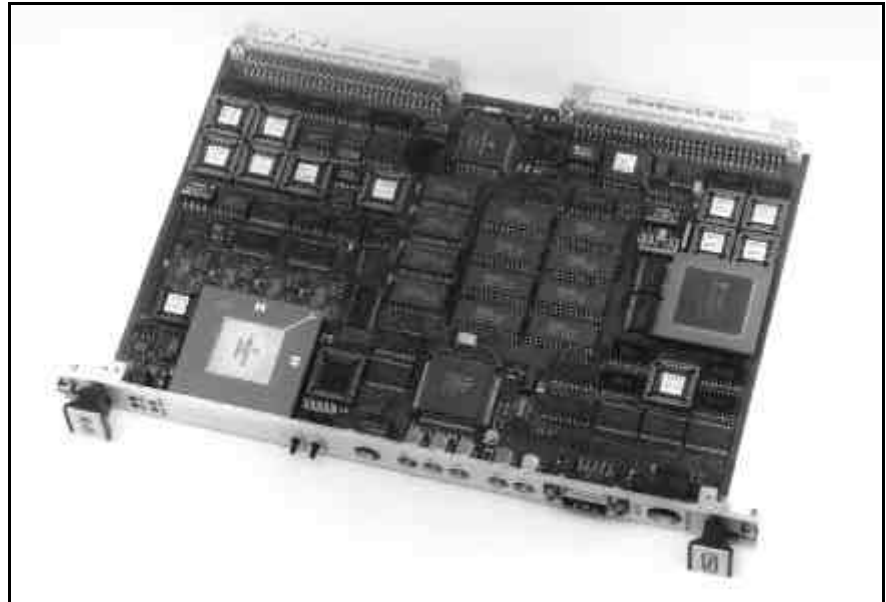
- CPU MC68360 and up to 16 Mbytes DRAM
- Ethernet interface
- Graphic processor GDP HD64400
- CLUT using 256 of 16 million colors and hardware cursor
- Max. 1600 x 1200 pixels at 135 MHz pixel frequency
- Video memory max. 2 MB VRAM and max. 16 MB DRAM frame memory
- Mouse and keyboard interface

Software Support

- WiM: local Window manager
- PGRAF: graphic manager, command interpreter
- Graphic libraries for OS-9 and VxWorks

Applications

- Process control systems
- Process visualization
- Industrial graphic terminals



Intelligent High Resolution Graphic Board
VME-IGP is an intelligent color graphic board including an Ethernet interface. It contains a CPU MC68360, up to 16 Mbytes DRAM and 2 Mbytes shared SRAM.

The graphic section of this VMEbus slave board is equipped with a powerful graphic controller of type GDP HD64400. For the video memory up to 2 Mbytes video RAM and a maximum of additionally 16 Mbytes DRAM are available as image buffer and GDP instruction memory.

The graphic board includes an 8 bits color lookup table for 256 of 16.7 million colors. The maximum pixel frequency of VME-IGP at a resolution of 1024 x 768 pixels and 105 Hz refresh rate amounts to 135 MHz. For resolutions greater than 800 x 640 pixels 2 Mbytes of VRAM are essential.

Software Support

As a standard, on VME-IGP the runtime system of the real-time multitasking operating system PEARL/RTOS-UH is integrated, together with the multitasking capable Window Manager WiM.

Communication with the VMEbus master CPU board is performed via the shared SRAM, where graphic instructions can be stored as batch commands. The graphic controller can process interrupts and can generate VMEbus interrupts as well.

The graphic package PGRAF, which is available for the host CPU supports the powerful instructions of the graphic controller GDP 64400.

To be able to use the available software, the IGP must always be operated in the A32/D32 mode.

Window Manager WiM

WiM offers a comfortable and real-time capable user interface. For development, text windows are available, for process visualization graphic windows are available. Icons are supported on the desktop and within the windows.

Via the event interface, each C or PEARL program can become a mouse-operated application.

Graphic Package PGRAF

PGRAF is a multitasking capable graphic package designed for support of HD64400 GDP graphic processors.

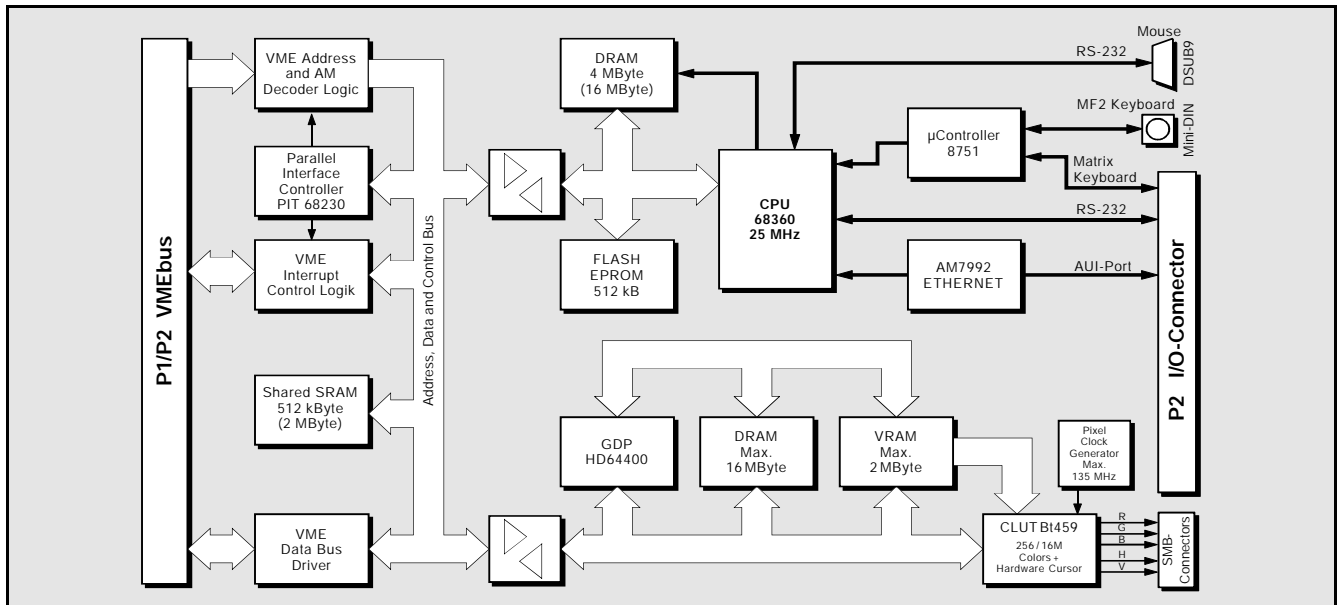
The graphic package contains graphic base - functions for process graphics display as well as for drawing of free definable lines and poly lines, circles and ellipses as well as arcs of circles and ellipses in absolute or relative mode. Moreover the graphic - package PGRAF contains functions for zooming with or without interpolation, stepless rotation of graphic elements and clipping (defining a range, where drawing is enabled or disabled). Additionally complex text displays are supported including proportional characters and italics as well as filling of compact planes with any definable fill pattern.

Additionally for graphic output a terminal emulation is supported, similar to VT52 for test output, as well as a hardcopy function for various printers such as e.g. NEC P62 Color or HP DeskJet 550C.

The graphics package PGRAF must be ordered separately.

VME-IGP

High Resolution Color Graphic Processor



Technical Specifications:

Process section:

CPU:	MC68360, 25 MHz
Memory:	512 kbytes Flash EPROM max. 16 Mbytes DRAM max. 2 Mbytes shared SRAM
Graphic processor:	GDP 64400
Video memory:	max. 2 Mbytes VRAM and max. 16 MB DRAM
Resolution:	variable by programmable pixel clock generator; max. 1600 x 1200 pixels at 135 MHz pixel frequency
Color information/pixel:	8 bits
Color look-up table:	256 of 16.7 million colors
Video output:	RGB analog
Interfaces:	Ethernet (AUI port), MF2 keyboard, mouse, RS-232

VMEbus section:

Base address:	selectable by software over the whole address space over 4 Gbytes/16 Mbytes
VMEbus revision compatibility:	IEEE 1014 rev. D
Data transfer options:	SADO32, SD32

General:

Temperature:	0...70 °C
Humidity:	max. 90%, non-condensing
Connector types:	P1 (VMEbus): DIN 41612 - C96 P2 (Ethernet, RS-232): DIN 41612 - C96 P3 (keyboard/front panel): mini DIN female P4 (mouse/front panel): DSUB9 male BNC1..BNC5 (video signals): SMB females
Board size:	160 mm x 233 mm

General (continued):

VME dimensions:	6 U height, 1 slot width
Weight:	approx. 500 g
Power consumption:	approx. 3.7 A at +5V ±5%

Order information:

Designation	Order no.	
VME-IGP-1M	Intelligent graphic board including CPU 68360, 4 MB CPU DRAM, 512 kB Flash, 512 kB SRAM, GDP64400, 1 MB VRAM	V.1505.02
VME-IGP-2M	as above, but 2 MB VRAM (essential for resolutions greater than 800 x 640)	V.1505.04
VME-IGP-4MD-GDP	additionally 4 MB graphic DRAM	V.1505.11
VME-IGP-16MD-GDP	additionally 16 MB graphic DRAM	V.1505.12
VME-IGP-16MD-CPU	16 MB CPU DRAM instead of 4 MB	V.1505.13

Software:

VME-IGP-PGRAF	PEARL graphic library for RTOS-UH	V.1505.40
VME-IGP-WiM	Window manager	V.1505.41
GED	Graphic editor for RTOS-UH	P.4016.02
HCOPI	Hardcopy program for RTOS-UH	P.4021.01
VME-IGP-OS9/68K	IGP graphic library for OS9 at 68K CPU	V.1505.50
VME-IGP-OS9/PP	IGP graphic library for OS9 at Power PC	V.1505.51
VME-IGP-VxWorks	IGP graphic library for VxWorks	V.1505.55