VME-IGC-2M / VME-ACRTC-2M
# VGA Graphics Adapter

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Features
- Intelligent graphic controller (IGC)
- Available without CPU as well (ACRTC)
- 16 colors or grey steps, color lookup table
- Resolution 640 x 480 or 800x 600 pixels
- 2 Mbytes video memory
- User interface
- MF2 keyboard interface
- Mouse interface

Software Support
- WiM - local Window manager
- PGRAF - graphic manager, graphic library

Applications
- Process control systems
- Process visualization
- Industrial graphic terminals
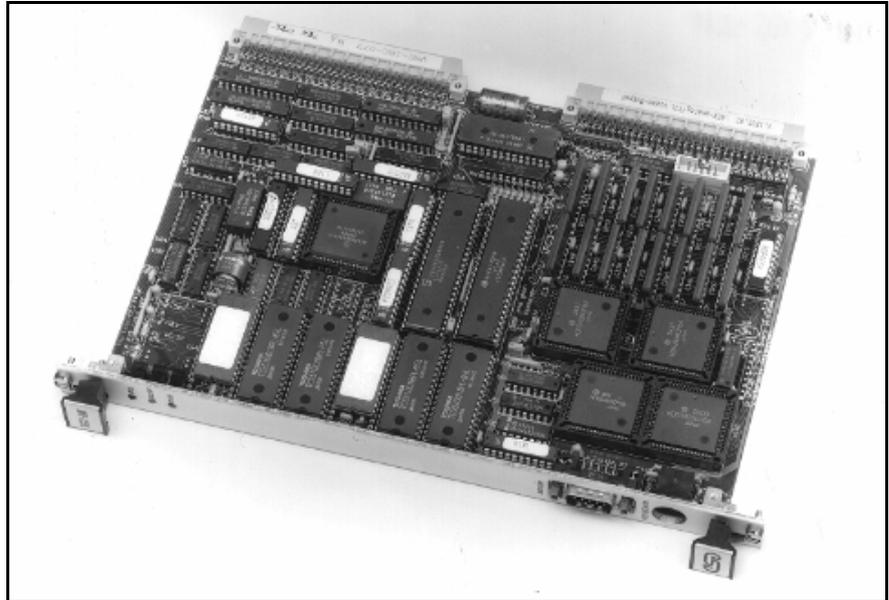
Intelligent Graphic Board
VME-IGC-2M is an intelligent color graphic board using a CPU 68000 and up to 512 kB shared SRAM on board. The graphic section of this VMEbus slave board is equipped with a powerful graphic controller of type ACRTC 63484. For the video RAM 2 Mbytes of dynamic RAM are available. The graphic board has a 6 bits color lookup table to select 16 colors out of 256,000. A RGBI-TTL output as well as a RGB analog output are available. The maximum resolution is 1024 x 1024 pixels containing 4 bits of color information, so that 16 colors are available per image.

The resolution is compatible to the VGA standard using 640 x 480 pixels, thus a 14" monitor at a refresh rate of 70 Hz (non-interlaced), such as NEC Multisync or EIZO Flexscan can easily be connected. The maximum pixel frequency of VME-IGC-2M is 38 MHz (refresh rate 50 Hz).

Software Support
As a standard, on VME-IGC-2M the runtime system of the real-time multitasking operating system PEARL/RTOS-UH is integrated, together with the multitasking capable graphic package PGRAF for supporting the powerful instructions of graphic controller ACRTC 63484. Furthermore for users of the operating system PEARL/ RTOS-UH we offer the software function package **PSCOPE** for output of on-line curve traces or bar graph windows etc. containing programmable update intervals for each window as well as graphic editor **GED** for comfortable design of process graphics.

Communication with the VMEbus master CPU board is performed via command and data channels in the shared RAM of VME-IGC-2M. The graphic controller can process interrupts and can generate VMEbus interrupts as well.

Graphic Package PGRAF for VME-IGC-2M
PGRAF is a multitasking capable graphic package for support of ACRTC 63484 graphic processors. It is suited for display of process graphics with complete integration into the PEARL/RTOS-UH development environment. The graphic package contains graphic base functions such as drawing of lines and poly lines, circles and ellipses as well as arcs of circles or ellipses in absolute or relative mode. Moreover, rectangular sectors can be moved, rotated or mirrored; filled planes can be filled with any definable fill pattern (in 16 x 16 pixel matrix). Additionally for graphic output a terminal emulation similar to VT52 for text output is supported. A text can be output, e.g. after positioning the graphic cursor, via the PEARL statement

"PUT text TO graphic_crt BY A;"

where the write direction can be selected in steps of 45 degrees, furthermore the character size as well as the font are selectable.

A hardcopy function for matrix printers, e.g. NEC P6+/P7+ (including color) or HP Deskjet 550C, is supported.
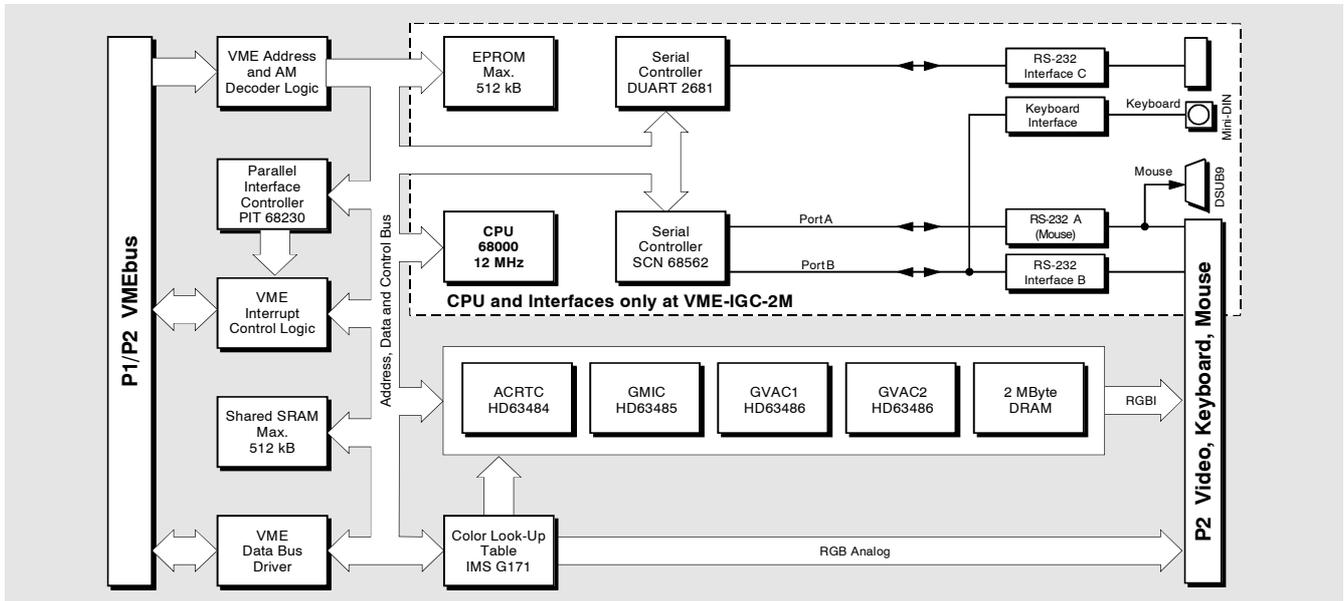
Software Package PSCOPE
PSCOPE generates curves and measured value graphics. The data may be displayed on-line or from a mass storage memory (off-line). The size of the windows, the scaling and resolution etc. can be selected.

PSCOPE is multitasking capable, supports the simultaneous display of up to 12 independent windows and 24 variables and processes serial data input.

(This product is not recommended for new designs.)

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Technical Specifications:

Process section:	
CPU (only at IGC-2M):	MC 68000, 12 MHz
Memory: (only at IGC-2M)	512 kbytes battery-backed SRAM 256 kbytes EPROM
Graphic processor:	ACRTC 63484 with support chips GVAC 63485 and GMIC 63486
Video memory:	2 Mbytes
Resolution:	max. 1024 x 1024 pixels, 640 x 480 pixels (VGA) at 32 MHz pixel frequency (refresh 72 Hz) or 800 x 600 pixels (super VGA) at 38 MHz pixel frequency (refresh 50 Hz)
Color information per pixel:	4 bits
Color look-up table:	16 of 256,000 colors
Video outputs:	RGBI-TTL and RGB analog
Interfaces (only at IGC):	MF2 keyboard, mouse, RS-232

VMEbus section:	
Base address:	selectable by jumpers over the whole address range over 4 GB /16 MB
Address modifier (AM):	full AM decoding additionally with don't care mode for 'supervisory'/ 'non-privileged' mode
VMEbus revision compatibility:	IEEE 1014 rev. C.1
Data transfer options:	SADO32, SD16

General:	
Temperature:	0...70 /C
Humidity:	max. 90%, non-condensing
Connector types:	P1: DIN 41612 - C96 P2: DIN 41612 - C96 Only at IGC-2M: P3 (mouse/front panel): DSUB9 male connector P4 (keyboard/front panel): mini DIN/female connector P5 (RS-232): 10-pole connector
Boards size:	160 mm x 233 mm
VME dimensions:	6 U height, 1 slot width
Weight (IGC-2M):	450 g
Power consumption: (IGC-2M)	2.5 A at +5V ±5% max. 0.4 A at +12 VDC ±5% max. 0.4 A at -12 VDC ±5%

Order information:		
Designation		Order no.
VME-IGC-2M-WiM	Intelligent VGA graphics adapter with window manager program WiM	V.1503.02
VME-ACRTC-2M	VGA graphics adapter	V.1501.06
Software:		
GED	Graphic editor	P.4016.02
HCOPY	Hardcopy program	P.4021.01
PGRAF	Graphic package	P.4017.04

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