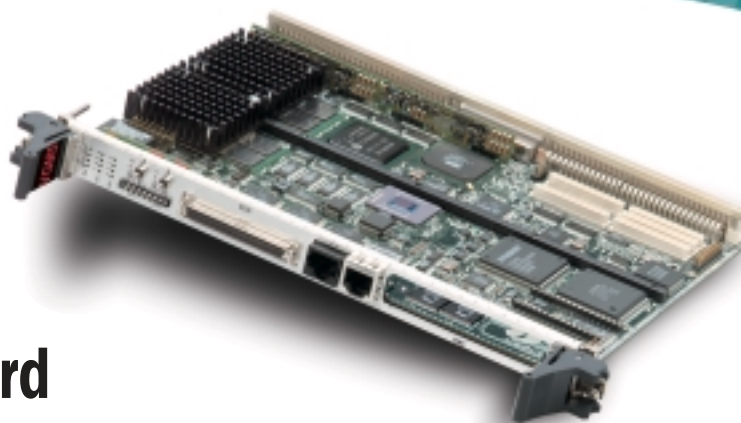


## Dual Processor General Purpose Board



### AT A GLANCE

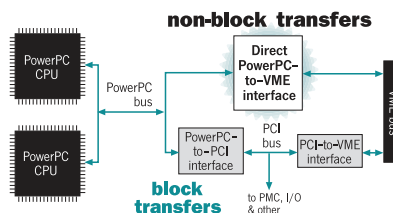
- PowerPC 7400 AltiVec™ or PowerPC 750
- Up to 466 MHz
- Dual or single CPU
- Up to 2 MB L2 cache per CPU
- Up to 512 MB SDRAM
- Up to 64 MB Flash
- VME Speedway™ PowerPC-to-VME direct data path
- On-board serial, Ethernet and Wide Ultra SCSI
- Optional PØ•PCI™ secondary data bus
- DSP ready with Synergy's Math Library
- VxWorks®, Linux™ SMP or Integrity®

### Dual PowerPC® G4 CPUs

The VGM5 gives you the muscle of dual PowerPC G4 (7400) or 750 CPUs combined with a long-proven board architecture and a full range of I/O options. The VGM5 offers processing speeds up to 466 MHz, and up to 2 MB L2 backside cache per processor. The VGM5 is also available in a single processor version.

### Direct PowerPC-to-VME Data Path

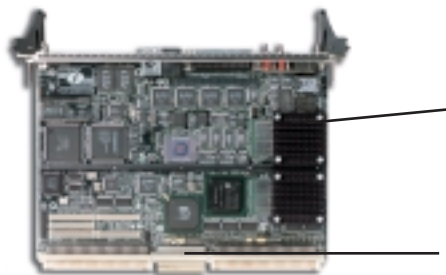
Synergy's exclusive VME Speedway™ direct data path bypasses an inefficient PCI-to-VME bridge translation when performing non-block transfers, the most common VME bus activity. Result: Non-block transfers are executed in half the normal time.



### Software Support

Synergy offers comprehensive board support packages for VxWorks and Linux, including Linux with symmetric multiprocessing (SMP). The VGM5 also runs SMon, Synergy's all-inclusive system monitor, configuration and diagnostic firmware, with power-on and initiated BIT.

For DSP applications, Synergy offers its own comprehensive math library containing several hundred of the most common DSP functions. This hand-coded library is optimized for the PowerPC and AltiVec and supports both VxWorks and Linux.

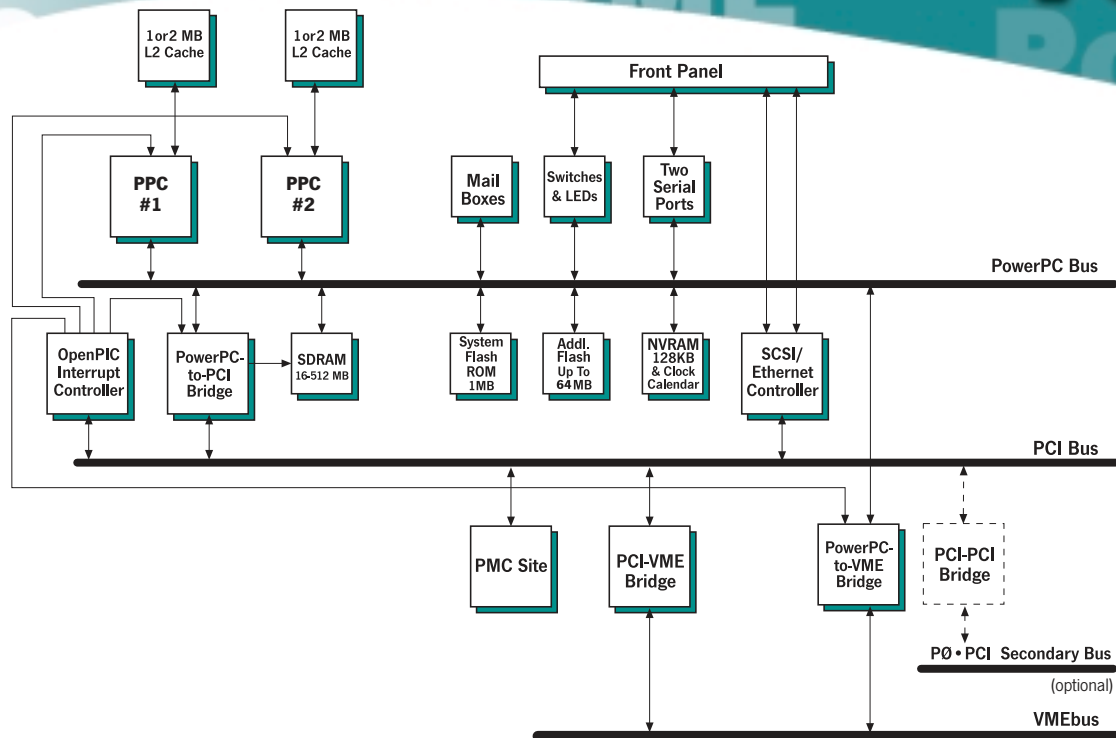


### PowerPC® 7400 Processor

The 7400 is a high-performance, low-power, 32-bit implementation of the PowerPC Reduced Instruction Set Computer (RISC) architecture combined with a full 128-bit implementation of Motorola's AltiVec™ technology. This high performance CPU is well suited for all types of general purpose and digital signal processing applications.

### PØ•PCI™ improves overall system bandwidth

PØ•PCI gives you a secondary backplane bus to complement the VME bus. Data traffic can be routed over the shared PCI bus via PØ connectors on system boards, increasing overall system bandwidth.



**Processor:**

- Dual or single PowerPC G4 or G3
- G3 (750): 300–466 MHz
- G4 (7400): 366, 400 MHz

**Memory:**

- Main memory: 32, 64, 128, 256 or 512 MB SDRAM supporting parity (ask about ECC availability)
- L2 cache: 1 or 2 MB per CPU
- Boot Flash: 1 MB, loadable via 32-pin JEDEC socket
- Optional user Flash: 4, 8, 16, 32, or 64 MB
- NVRAM (clock/calendar): 128 KB

**VME Interface:**

- Interface: VME64, opt. VME64x, A32, D64
- VME Speedway™: single translation direct data path from PowerPC to VME for non-BLT
- Tundra Universe II: PCI-to-VME interface for all other data transfers

**PCI Interface:**

- Local PCI bus: 64-bit/33 MHz
- PMC Interface: 64-bit/33 MHz
- Optional P0 • PCI™: 64-bit/33 MHz secondary PCI bus via P0 connector (requires VME64x backplane supporting P0 and Synergy P0 • PCI overlay)

**On-board I/O:**

- Ethernet: auto-sensing 10/100 Base-T
- Serial: Two RS-232 ports, up to 115.2 KB/s
- SCSI: Wide Ultra, 8/16 bit, up to 40 MB/s

**Physical Dimensions:**

- 6U form factor minus front panel: 9.19" (233mm) x 6.4" (160mm) x 0.80" (20mm)

**Weight:**

- 15.1 oz (428 g)

**Power Requirement:** (approx.)

- PPC G3: Up to +5V at 5.8 A\*
- PPC G4: Up to +5V at 7.8 A\* (\*depends on configuration)

**Environmental & Reliability:**

- Operating temperature: 0° to 50° C ambient with forced air cooling, 200 LFM minimum air flow
- Extended temperature: -20° to 71° C
- Storage temperature: -40° to 85° C
- Humidity: 0–95% RH non-condensing
- Altitude: 10,000 ft. with battery backup 50,000 ft. max. w/capacitor backup option
- MTBF: 136,243 hours (15.55 years)

**Other Features:**

- Ten status LEDs, eight user-programmable LEDs, one 8-bit readable switch, and two CPU reset/interrupt switches
- Programmable interrupts - priority of any interrupt source can be set in software
- Two board stiffeners
- Four 32-bit counters can be read at any time as well as generate interrupts
- Two 8-bit CPU mailboxes
- Real time clock/calendar, four-digit year
- JTAG support

**Options:**

- VxWorks, Linux or Linux SMP\* or Integrity (single processor only)
- Single or dual CPUs
- PMC carrier board for additional PMC sites (two slot solution)
- VME64x support
- P0 • PCI™ secondary PCI bus via P0
- Conformal coating
- Extended ruggedization level
- Extended temperature range
- Other options include CPU speed, main memory size, Flash size, and L2 cache speed ratio

\*Linux SMP not available for PPC 750 CPUs

For more information, visit our web site: [www.synergymicro.com](http://www.synergymicro.com)



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