PMCCG1

Rugged PMC graphics mezzanine

Features

- S3 2300E GPU
  - 256 Mbytes DDR2
  - 64-bit memory bus
- PCI-X interface
  - 32/64-bit 33/66/100/133 MHz PCI bus
- Dual channel output
  - 2x analog VESA outputs
  - Up to UXGA (1600 x 1200) @ 60 Hz
  - 2x digital DVI outputs
  - Up to WUXGA (1920 x 1200) @ 60 Hz
  - Build option for LVDS output
- Video input
  - RS-170, NTSC, PAL
  - CVBS or S-video
- Fast power supply discharge
- PMC form factor
- Air- and conduction-cooled variant

The PMCCG1 graphics board is designed to meet the needs of a wide range of graphics applications on host cards with PCI bus architectures.

The S3 2300E GPU is a perfect balance between high performance and low power for many military and aerospace applications. It provides 256 Mbytes of DDR2 local memory.

With its PCI-X host interface, the PMCCG1 offers significantly higher performance than previous generations of PMC graphics cards, which were limited to 32-bit, 66 MHz operation. On the mezzanine, the PCI bus is bridged to 4-lane PCI Express link to the GPU.

Designed to be a pin-compatible superset of the PMCGA4C, it offers two independent graphics channels in both analog VESA and digital DVI formats. In addition, there is a build-time option to convert one of the DVI outputs to LVDS.

The PMCCG1 has one channel of video input, which may be selected as RS-170, NTSC or PAL, in either CVBS or S-video formats.

Driver support is available for both Intel® and PowerPC® platforms under VxWorks® and Integrity®, and for Intel under Microsoft® Windows® and Linux® operating systems.

Contact GE for support on safety-critical applications, and software to DO-178B.

The card is available in all five of the standard GE build levels, from benign lab environments through to wide temperature rugged conduction-cooled.

In applications where it is desirable to have a fast shutdown of computing equipment, an option exists for a fast power supply discharge.

In order to support design-ins on many different host cards, a PMC "riser" module is available to bring the video output from the PMCCG1 P14 I/O connector to the front panel. The PMCCG1FTM-11 has 2x DVI-I connectors for VGA and DVI (or LVDS if supported by the PMCCG1 variant fitted), and 2x SSMB connectors for TV input (use cable ARACC-3BNCSSMB1 to convert to BNC).

PMCCG1 – Rugged PMC graphics mezzanine

Specifications

GPU
- S3 2300E

Video memory
- 256 Mbytes DDR2
- 64-bit wide memory interface

Number of channels
- Two
- Dual independent channels

RGB output
- VESA resolutions up to UXGA 1600x1200@60Hz

Digital output
- DVI 1.0 resolutions up to UXGA 1600x1200@60Hz

Video input
- RS-170, NTSC, PAL
- CVBS or S-video

Form factor
- PMC
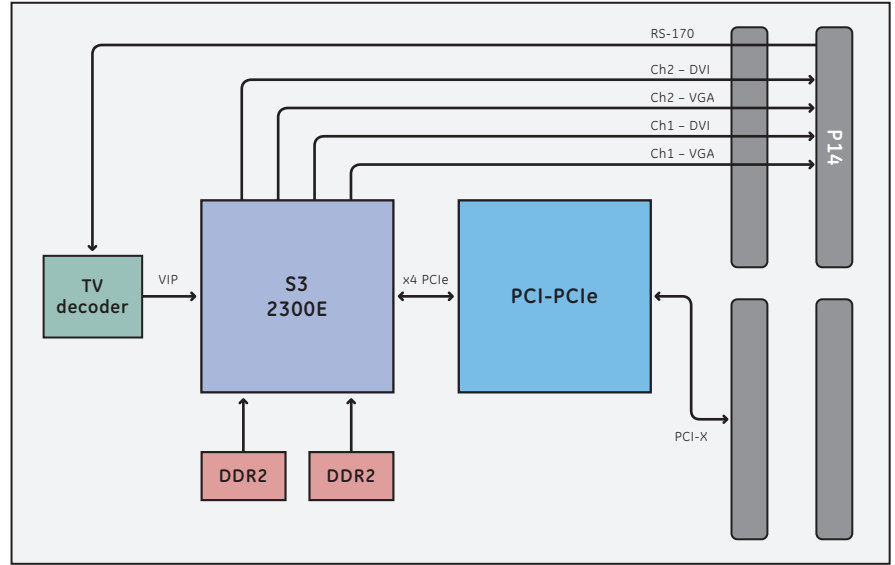- PCI-X interface
  – 32 or 64-bit
  – 33/66/100/133 MHz

Environment
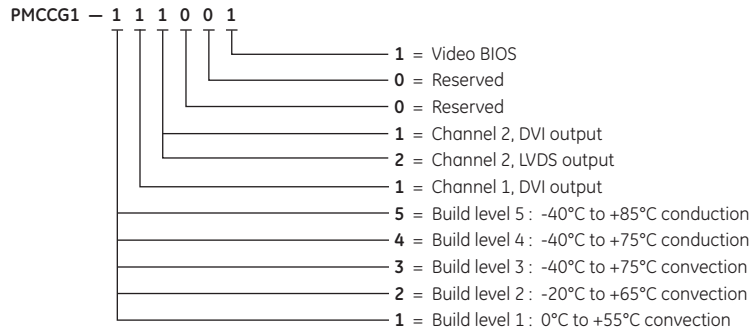- Level 5: -40°C to +85°C operating
- Conduction cooling

Drivers
- OpenGL 1.5 and DirectX 9.0c drivers for Microsoft® Windows® and Linux® running on Intel® host card available from S3
- VxWorks® OpenGL ES driver for PowerPC® or Intel available from GE

Block Diagram

Ordering Information

PMCCG1 — 1 1 1 0 0 1

- **1** = Video BIOS
- **0** = Reserved
- **0** = Reserved
- **1** = Channel 2, DVI output
- **2** = Channel 2, LVDS output
- **1** = Channel 1, DVI output
- **5** = Build level 5 : -40°C to +85°C conduction
- **4** = Build level 4 : -40°C to +75°C conduction
- **3** = Build level 3 : -40°C to +75°C convection
- **2** = Build level 2 : -20°C to +65°C convection
- **1** = Build level 1 : 0°C to +55°C convection

PMCCG1FTM-11   PMCCG1 Front Transition Module

About GE Intelligent Platforms

GE Intelligent Platforms is a division of GE that offers software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil and gas, government and defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information, visit www.ge-ip.com.

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