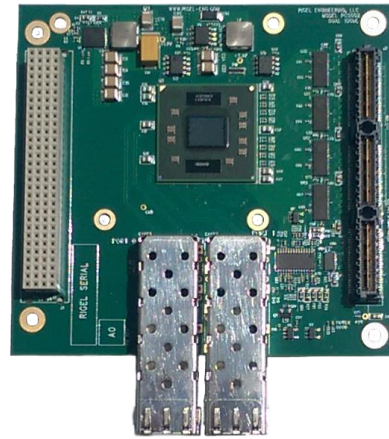# RIGEL ✦ ENGINEERING

Custom solutions with off-the-shelf pricing

PC5002

Dual 10GbE port card for PCIe/104 and PCI/104-Express

Features:

- ★ Dual 10GbE ports on a PCIe/104 platform
- ★ Meets PCI/104-Express & PCIe/104 Specification Version 2.10
- ★ PCIe/104 Type 1 Connector pinout
- ★ Standard PCIe/104 Form factor (3.775" x 3.550")
- ★ Configured as a single x8 PCIe lane
- ★ PCIe x8 5GT/s Generation 2 speed (Gen 1 compatible)
- ★ PCIe/104 Stack up or stack down flexibility
- ★ 10GbE ports support SFP+ transceivers
- ★ Supports 10GBASE-LR/SR or 10GSFP+Cu interfaces
- ★ 2 independent 10GbE channels
- ★ Supports Jumbo Frames
- ★ 64-bit Addressing
- ★ 128 Transmit Queues
- ★ Air-Cooled and Rugged, Conduction-Cooled available
- ★ Rigel's Standard 3 Year Warranty

Rigel's PC5002 Dual 10GbE card is an extremely powerful, high-speed, dual-port, 10 Gigabit Ethernet interconnect solution for the PCIe/104 platform. The model PC5002 is the two-port version of the model 5001 and provides two full-speed and independent 10GbE ports. Each port supports 10GBASE-LR, 10GBASE-SR or 10GSFP+Cu connectivity using universal SFP+ cages.

The PC5002 features Intel's 3rd generation 10GbE controller, the 82599ES Dual-port 10GbE controller. The 2-port PC5001 utilizes the 82599ES controller interfaced to the processor through a single x8 lane PCI Express port. It will auto-negotiate to a reduced number of PCIe lanes if necessary. The 82599ES controller is capable of negotiating the PCIe lanes down to x4, x2 or x1.

The 82599ES employs the latest in Intel's Virtualization Technology for Connectivity (VT-c) to streamline intelligent offloads and storage over Ethernet applications.

The PC5002's flexibility and state of the art design make it ideal for high-speed peer-to-peer communication applications among many others that require blazing performance.

Contact our experienced engineering team to learn more about the PC5002.

Hardware Specifications

PCIe Host Interface

- ★ PCIe Gen 2 (compatible with Gen 1)
- ★ Single x8 default PCIe configuration
- ★ PCIe Base Specification Rev 2.0
- ★ 100MHz PCIe Frequency
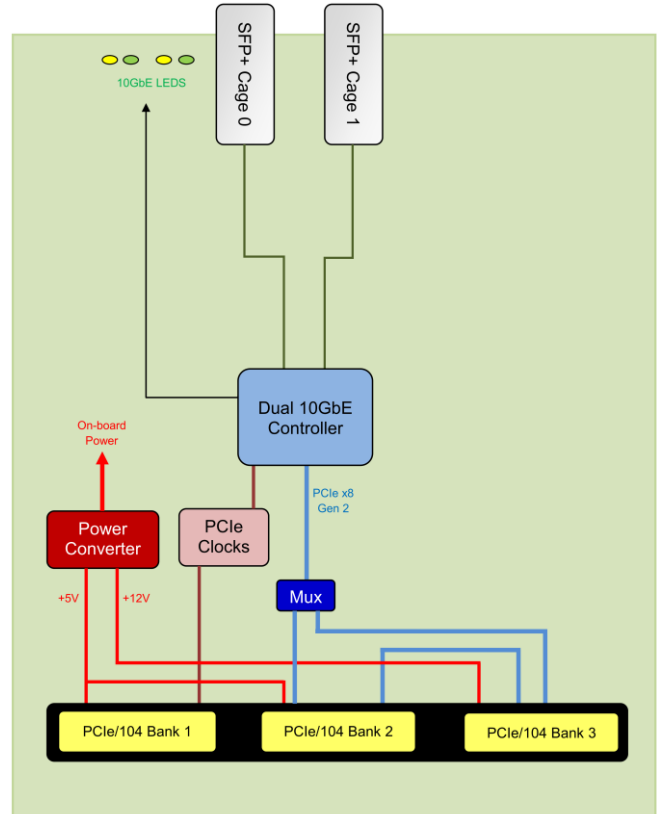- ★ Port widths of x8, x4, x2 & x1

Ethernet

- ★ One Intel 82599ES Dual Port controller
- ★ 2 SFP+ pluggable interfaces
- ★ 10GBASE-LR, 10GBASE-SR or 10GSFP+Cu connectivity

Memory

- ★ 8 Mbit Serial Flash for optional Boot ROM
- ★ 128 Kbit Serial EEPROM for configuration

Miscellaneous

- ★ All power good LED
- ★ 8 Ethernet LEDs, Link, speed & Activity
- ★ Various software driver support

Physical / Electrical / Environmental

- ★ Standard PCIe/104 form factor (3.775" x 3.550")
- ★ 2.7 oz / 77 grams (no SFP modules or heat sink)

- ★ +5V Maximum / typical power : 1.6A / 1.2A

- ★ Temperature:
  - Operating (standard) : 0°C to +70°C
  - Storage : -40°C to +85°C

- ★ Relative Humidity:
  - Operating: 5% to 95%, non-condensing
  - Storage: 5% to 95%, non-condensing

Ordering Information

PC5002-xx00

Base Model

Operating Temperature & Cooling Options

0 = 0°C to +70°C, Air Cooled
1 = -40°C to +85°C, Air Cooled
2 = -40°C to +85°C, Conduction Cooled
Z = Customer specific board configuration

PC104 Type

0 = PCI/104-Express (With PCI Connector)
1 = PCIe/104 (Without PCI Connector)

Reserved

Reserved

At Rigel Engineering, we are dedicated to working directly with your Engineers and System Designers to provide the best possible solution that meets or exceeds your requirements.

Custom solutions with off-the-shelf pricing