

## Presence 2

PRESENCE-2 is a PCI bus based FPGA/DSP platform for the most demanding of applications. Hosting from 2Gb to 4Gb of on-board memory, and with a wide variety of i/o channels, the system is highly applicable in data intensive tasks.

## High performance Vertex II FPGA and TI DSP card

### Overview

PRESENCE-2 (PCI64-NP) is a unique PCI based FPGA/DSP hardware platform for solving high-performance embedded computing problems. The card is targeted at applications requiring the use of large amounts of RAM and where complex systems need implementing together with standard signal processing problems.



### APPLICATIONS

#### Data Intensive problems such as:

- Signal Processing
- Pattern Analysis
- Communications
- Image analysis
- On line Data processing
- Parallel computational research
- Bioinformatics and medical data analysis

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The card uniquely supports up to 4G-bytes of RAM interfaced directly to the FPGA. In addition, the FPGA is presented directly to the PCI bus via a sophisticated bridge device. Extensive expansion is provided including a dedicated LVDS multi-card link.

The card is available in 3, 4 or 6 Million system gate Virtex II FPGA versions. The FPGA interfaces to a fast 32-bit integer Digital Signal Processor, up to 4 G-bytes of PC133 SDRAM memory, two independent fast Zero-Bus-Turnaround memories, dual high-speed 4-bit LVDS data channels, Sundance SDB compatible digital I/O header and a mezzanine expansion card connector. With each on-board resource given an independent interface to the FPGA, the designer is able to implement bus structures of choice, rather than the board itself imposing a fixed wiring scheme. Additional host system resources (system memory, I/O devices etc.) are accessible via the PCI bus with the card as bus master.

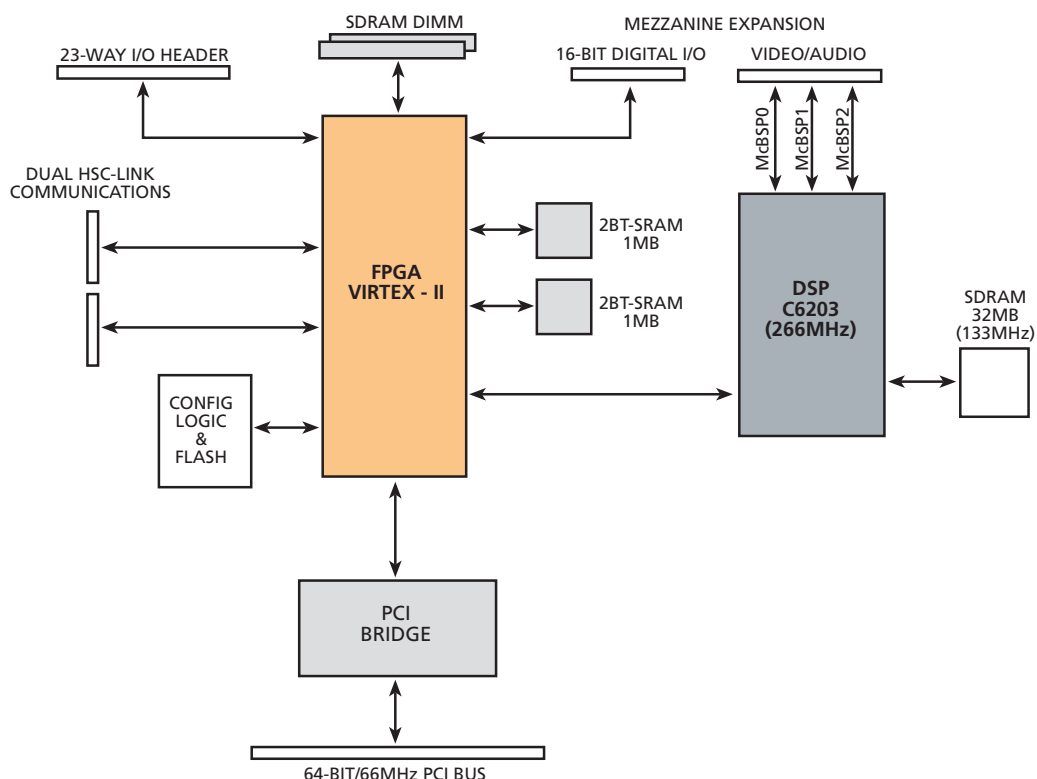
The addition of multiple off-board communication channels and digital I/O enables parallelisation of the hardware with other cards to support tightly coupled task-sharing configurations.

A supplied system driver offers a convenient way of up loading new solutions into the FPGA and DSP via the PCI bus.

For pattern analysis, data mining, image analysis and other pattern matching tasks an embedded version of the AURA pattern matching library is available for DSP software development, together with a DSP BIOS driver for simplified code access to the board resources.

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### Technical Specification



- PCI v2.2 compliant 64-bit universal PCI card.
- 3, 4, or 6 million system gate Virtex-II FPGA.
- 266 MHz TI 'C6203 DSP offering 2128 MIPS.
- PCI bus master capability with full Block/Scatter-Gather transfer DMA features.
- High-speed 32-bit 266 MByte/s FPGA-DSP FIFO link.
- Two PC133 DIMM sockets supporting up to 4 G-bytes of memory.
- 32 Mbyte external DSP memory.
- Two independent 133 MHz 9 Mbit synchronous ZBT memories.
- Mezzanine expansion slot for video and/or audio processing.
- Compatible Sundance Data Bus header for fast off-board digital I/O.
- Two independent 4-bit bi-directional LVDS channels for high-speed board-to-board / chassis-to-chassis communication.
- FPGA reconfigurable 'on-the-fly' via PCI bus or on-board flash memory.
- PCI bus bridge accessible from the DSP via the FPGA.
- Embedded DSP code loaded via PCI bus.
- Embedded AURA API for DSP RTOS/BIOS.
- DSP BIOS driver.
- Host WindowsNT/2000 driver.
- Host Linux/Solaris driver.

The PRESENCE II card is available integrated to the high performance data processing system, the Cortex II parallel data search system. Further details of Cortex II are available on our web site.

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powered by **AURA**

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Company Registered Number 3973962  
ISSUE 1.1 2004

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high performance pattern recognition systems