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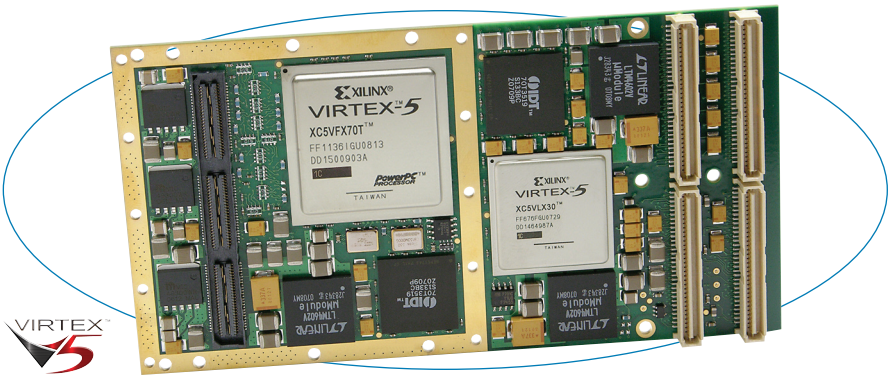
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Find the *Acromag PMC-VFX70* at our website: ***Click HERE***

Acromag
THE LEADER IN INDUSTRIAL I/O

PMC-VFX70 User-Configurable Virtex-5 FPGA Modules with Plug-In I/O

- XC5VFX70T FPGA: 71,680 logic cells and embedded PowerPC 440 processor 32-bit RISC core



Download your own programs into the reconfigurable FPGA to quickly create custom I/O module. Optional I/O modules plug into the front mezzanine.

Description

Acromag's PMC-VFX boards feature a reconfigurable Xilinx® Virtex™-5 FPGA enhanced with multiple high-speed memory buffers and a high-throughput PCI-X interface. Field I/O interfaces to the FPGA via the rear J4/P4 connector and/or with optional front mezzanine plug-in I/O modules. The result is a powerful and flexible I/O processor module that is capable of executing your custom instruction sets and algorithms.

The on-board FPGA has a hard core PowerPC 440 block to handle the most complex and memory-intensive computing applications. Offload your CPU-intensive operations such as video and 3D data processing or fixed-point math for superior system performance. The PowerPC core also enables system-on-chip functionality with real-time processing capabilities.

64 I/O lines are provided via the rear (J4) connector. Additional I/O processing is supported on a separate mezzanine card that plugs into the FPGA base board. A variety of these external I/O cards offer an interface for your analog and digital I/O signals. See the AXM I/O Card data sheet (Bulletin 8400-458) for more details.

Large, high-speed memory banks provide efficient data handling. Generous DDR2 SDRAM buffers store captured data prior to FPGA processing. Afterward, data is moved to dual-port SRAM for high-speed DMA transfer to the system. Our high-bandwidth PCI-X interface ensures fast data throughput.

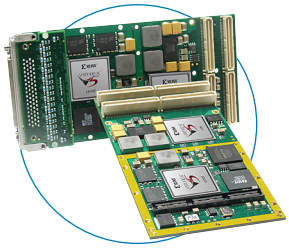
Take advantage of the module's support of conduction cooling for efficient dissipation of heat in environments with inadequate cooling air flow. Optional extended temperature models operate from -40 to 85°C.

Acromag's Engineering Design Kit provides software utilities and example VHDL code to simplify your program development and get you running quickly. A JTAG interface enables on-board VHDL simulation.

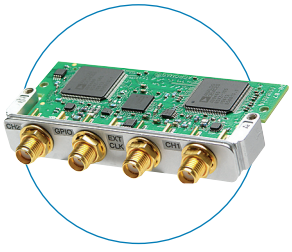
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Features

- Reconfigurable Xilinx Virtex-5 FPGA
- PCI-X bus 100MHz 64-bit interface
- Supports both front and rear I/O connections
- 64 I/O or 32 LVDS lines direct to FPGA via rear (J4)
- Plug-in I/O modules available for front mezzanine
- FPGA code loads from PCI bus or 32MB flash memory
- Two banks of 256K x 32-bit dual-ported SRAM
- Two banks of 64M x 16-bit DDR2 SDRAM
- Other memory options available (contact factory)
- Supports dual DMA channel data transfer to CPU/bus
- Supports 3.3V signalling
- Support for Xilinx ChipScope™ Pro interface
- Conduction-cooled or -40 to 85°C operating range



Plug-in AXM I/O or use base board for conduction-cooled applications.



Plug-in modules sold separately for analog and digital I/O functions.

Specifications

FPGA

FPGA: Xilinx Virtex-5 FPGA XC5VFX70T FPGA with 71,680 logic cells and PowerPC processor block

FPGA configuration: Download via PCI bus or flash memory.

Example FPGA program: VHDL provided for local bus interface, control of front & rear I/O, SRAM read/write interface logic, and SDRAM memory interface controller. See EDK kit.

I/O Processing

Acromag AXM I/O modules: for front mezzanine: AXM modules attach to the board for additional I/O lines. Analog and digital I/O AXM modules are sold separately.

Rear I/O: 64 I/O (32 LVDS) lines supported with a direct connection between the FPGA and the rear I/O connector (J4).

Engineering Design Kit

Provides user with basic information required to develop a custom FPGA program. Kit must be ordered with the first purchase of a PMC-VFX module.

PMC Compliance

Conforms to PCI Local Bus Specification, Revision 3.0 and CMC/PMC Specification, P1386.1.

Electrical/Mechanical Interface: Single-Width Module.

PCI Bus Modes: Supports PCI-X at 100MHz, 66MHz and Standard PCI at 66MHz and 33MHz

PCI-X Master/Target: 32-bit or 64-bit interface

Signaling: 3.3V compliant.

Interrupts (INTA#): Interrupt A is used to request an interrupt.

Environmental

Operating temperature: 0 to 70°C or -40 to 85°C (E versions)

Storage temperature: -55 to 105°C.

Relative humidity: 5 to 95% non-condensing.

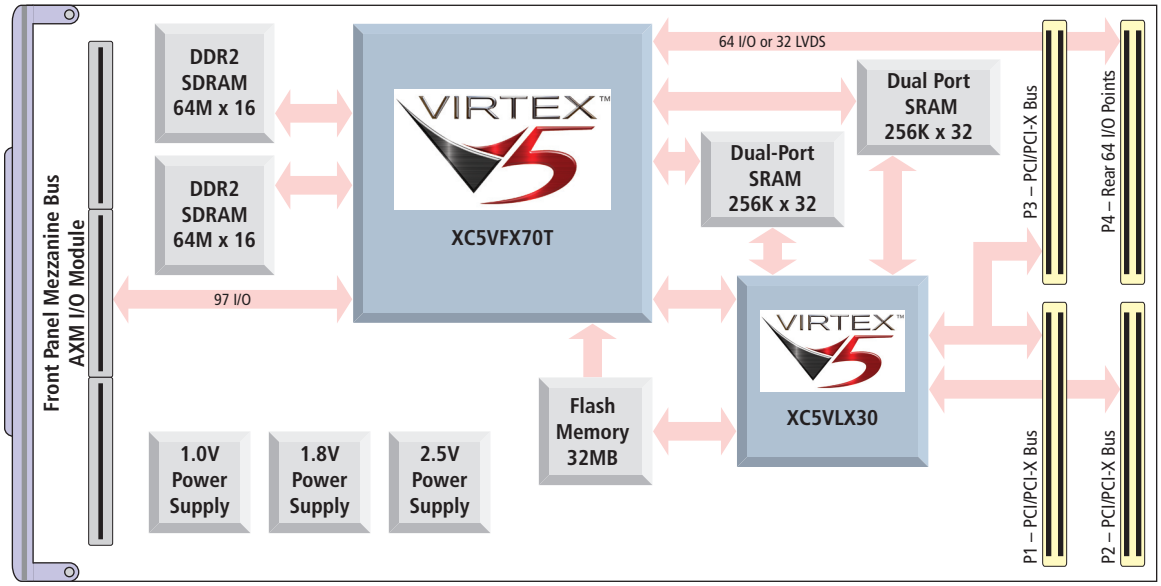
Power: Consult factory. Operates from 3.3V supply.

MTBF: Consult factory.

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PMC Modules



Ordering Information

PMC Modules

PMC-VFX70
User-configurable Virtex-5 FPGA with 71,680 logic cells and PowerPC processor block

PMC-VFX70E
Same as PMC-VFX70 with extended temperature range

PMC-VFX-EDK
Engineering Design Kit (one kit required)

AXM Plug-In I/O Extension Modules

For more information, see AXM data sheet.

AXM-A30
2 analog input 105MHz 16-bit A/D channels

AXM-D02
30 RS485 differential I/O channels

AXM-D03
16 CMOS and 22 RS485 differential I/O channels

AXM-D04
30 LVDS I/O channels

AXM-??
Custom I/O configurations available, call factory.

Software (see software documentation for details)

PMCSW-API-VXW
VxWorks® software support package

PCISW-API-WIN
Windows® DLL software support

PCISW-API-LNX
Linux™ support (website download only)

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