



ADX4M™ Advanced FPGA Development Platform

SAIC's ADX4M™-Xilinx® Virtex-4™-based development platform is advance, powerful, and highly flexible. Potential applications include:



- Software-Defined Radio
- ASIC Prototyping Applications
- Reconfigurable Computing
- Real Time Signal Processing
- Software Acceleration

The ADX4M™ platform provides four customer-configurable Xilinx® Virtex-4™ FPGAs, in a design optimized for high-speed real-time algorithms. The high-performance Virtex-4™ FPGAs are low-power, high-density devices, and enable the ADX4M™ to provide logic densities of up to 50 million gates on a single board.

An open architecture makes interfacing to the ADX4M™ easy, using an industry standard PCI-X bus and a PMC mezzanine card site. The PMC mezzanine card site allows the user to select from commercially available I/O modules, including A/D converters, network interfaces, and digital receivers. The ADX4M™ also supports a wide selection of onboard interfaces including gigabit Ethernet, RS-232, RS-422 and daughter board expansion. Direct board-to-board linkage is also supported, allowing multiple boards to communicate, without using the host backplane.

The ADX4M™ can be used in a stand-alone mode, in which the FPGA devices are loaded either from onboard flash memory or from a disk drive using the planned Serial-ATA support. With advanced features such as native gigabit Ethernet, very high speed DMA performance, the ability to link multiple boards, and upcoming System Generator support, the ADX4M™ is ready for the most challenging designs.



Specifications Summary

Input/Output	PMC Board Support
<ul style="list-style-type: none"> Industry-standard PMC interface for COTS or custom application Serial-ATA interface capable* RS-422/RS-232 interface LC optical transceiver supports gigabit Ethernet Applications Samtec Q series connectors for board to board communications 133MHz 64-bit PCI-X interface 	<ul style="list-style-type: none"> API for Red Rapid's PMC Receiver Series Development services available to provide interface to arbitrary PMC devices
FPGA Resource	VHDL Interface Reference Design
<ul style="list-style-type: none"> Four user-configurable FPGAs, (see options at right) Configuration using JTAG or host software Xilinx Platform Flash Memory for stand-alone configuration Generic 90ns 128 Mbit Flash Memory for user applications Flexible onboard clock synthesis with four programmable synthesizers Flexible data and clock forwarding options 	<ul style="list-style-type: none"> PCI-X host interface design, enabling bus mastering and high-speed DMA (4 channels) PCI/PCI-X PMC interface design P4 LVDS interface supporting PMC I/O Addressable systolic array interface design to provide chip-to-chip data and clock forwarding with flow control ZBT SRAM interface design JTAG configuration reference design Flash programming design Flash Memory Controller Clock configuration interface design Data Manipulation utilizing DMA Gigabit Ethernet reference design
Board Features	FPGA Options
<ul style="list-style-type: none"> Full-length PCI-compliant form factor FPGA-based PCI-X bus interface Two daughter card sites** Board-to-Board linking using Samtec Q cables Upto two 72Mbit ZBT SRAM per FPGA*** Gigabit Ethernet optical transceiver High speed LVDS I/O between FPGAs with upto 30Gb/s using High speed LVDS I/O pairs between FPGAs Rocket I/O connections between FX FPGAs <p><i>**Custom daughter card development available</i> <i>***Excludes the PCILX and PCIFX chips</i></p>	<ul style="list-style-type: none"> FX – Device Options <ul style="list-style-type: none"> XC4VFX 40, 60, and 100 in the -10, -11, or -12 Speed Grades LX and SX – Device Options <ul style="list-style-type: none"> XC4VLX 40, 60, 80, 100 and 160 in the -10, -11, -12 Speed Grades XC4VSX 55 in the -10, -11, or -12 Speed Grades
Ordering Information*	
<ul style="list-style-type: none"> Standard Configuration Part Number: SC802-100 Includes: <ul style="list-style-type: none"> Qty 1: XC4VFX60-10FF1152C Qty 2: XC4VLX60-10FF1148C DSP Configuration Part Number: SC802-200 Includes: <ul style="list-style-type: none"> Qty 1: XC4VFX100-11FF1152C Qty 2: XC4VSX55-11FF1148C Reconfigurable Computing Part Number: SC802-300 Includes: <ul style="list-style-type: none"> Qty 1: XC4VFX100-10FF1152C Qty 2: XC4VLX160-10FF1148C <p><i>*Contact SAIC for other board configurations</i></p>	

ADX4M™ Capabilities

- Industry Standard PCI Form Factor
- Five Xilinx® Virtex-4™ FPGAs, four for Algorithm Development
- Power-PC Support (FX Devices)
- One Industry-Standard PMC Mezzanine
- Two daughtercard sites**
- Flexible Clock Generation
- Industry standard SPF connection site including an Optical Transceiver
- Serial-ATA*, RS-232, RS-422 and JTAG connections
- PCI-X Bus Master Support
- High-Speed DMA Support
- Linux® Driver Support
- Applications:**
 - Software Defined Radio
 - Wireless IP Development
 - ASIC Prototyping
 - Reconfigurable Computing
 - Real Time DSP Applications
 - Software Acceleration

*under development.

**Custom daughter card development available

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