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RELIABILITY

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ENGINEERING
SUPPORT

ONE STOP
SOLUTIONS



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EMBEDDED COMPUTING SOLUTIONS



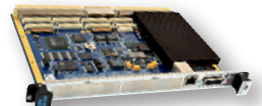
FPGA Modules



I/O Modules



COM Express



Single Board Computers

Depend on Acromag



Experience counts – especially when engineering the right embedded solution. And with more than 50 years experience, Acromag can help you reduce your costs and increase your productivity.



Acromag: The I/O Leader

Acromag is focused on developing embedded computing solutions that provide the best long term value in the industry. Compare and you will find that Acromag offers an unmatched balance of price, performance, and features.

50+ Years of I/O Experience

With over 50 years of industrial I/O design experience, Acromag stands alone in the high-performance bus-board market. Developing VMEbus I/O boards since 1984, we combine our process control expertise with extensive experience in embedded computing. This background gives us unrivaled insight to many unique concerns when interfacing computer systems to various sensors and controllers in a wide range of applications.

Acromag processor, FPGA, and I/O products are commonly used in these industries:

- military/defense
- aerospace
- transportation
- manufacturing
- semiconductors
- scientific
- communication
- research labs

Quality You Can Count On

We take every measure to guarantee dependable operation with ISO9001 AS9100 certified quality management. State-of-the-art manufacturing with industrial-grade components adds extra ruggedness. Advanced inspection and testing further ensure that Acromag I/O performs at or beyond their rated specs.

Technical Assistance

Drawing on a wealth of embedded I/O experience, our sales engineers are well qualified to help you design and develop your computing system. We take pride in our highly experienced staff that excels at after-sale technical support.

Global Representation

Great care has been put into building a team of highly skilled representatives and distributors. They are located around the world to service your needs.

Online Ordering

Find full documentation and pricing information online. You can get quotes and even order directly on our website.



Experience
Reliability
Extended Temperature
Extended Life Cycle

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Embedded Processing Solutions



Photo credit: US Air Force



VME Single Board Computers

VME multi-core 6U single board computers provide high-performance embedded computing with a range of CPU, I/O, and memory configurations.

- Intel® Core™ i7 or i5, 4th generation CPU
- Intel Core 2 Duo CPU
- Air-cooled or conduction-cooled



Embedded System Enclosures

The ARCX is the complete rugged embedded computing solution, coming equipped with CPU, carrier, power supply and optional power filter.

- Cableless and fanless design for rugged applications
- I/O expansion is available via XMC/PMC/Mini PCIe/mSATA modules
- Modify I/O with custom front panel designs



XMC 10GbE Interface Modules

10-Gigabit Ethernet interface modules deliver reliable, high-speed communication for data-intensive real-time embedded computing.

- Quad SFP+ copper/fibre or dual XAUI ports
- ASIC provides TCP/IP, FCoE, RDMA and stateless offload engine
- PCIe 2.0 x8 host interface



VPX RAID & SATA/SAS Modules

Data storage modules offer an effective solution for connecting SATA/SAS drives or RAID controllers to your CPU card.

- Bootable SATA/SAS drive modules
- RAID controller modules
- Support for dual slim SATA drives



VPX Single Board Computers

VPX 3U single board computers achieve high-performance multi-core computing with great flexibility for high-speed communication and I/O.

- Intel Core i7 CPU, up to 2.53GHz
- Dual 4-lane PCIe ports
- Air-cooled, conduction-cooled, or REDI



Rear Transition Modules

VME and VPX Rear transition modules add a variety of new connectors to a single board computer.



Software Support

Windows 7 32-bit driver package for VME and VPX single board computers. Includes individual drivers for Intel chipset, Ethernet, video, audio, serial, and Intel ME.

For more embedded computing, please see: www.acromag.com/boards



PMC FPGA Modules with AXM Support

PMC FPGA modules feature a high-speed I/O interface, user-customizable FPGA, and plenty of memory for efficient data handling.

- Up to 155K optimized logic cells
- -40 to 85°C and conduction-cooled models
- Plug-in I/O extension modules available (AXM)



High-Speed Serial I/O Modules

Advanced XMC FPGA modules feature multiple high-throughput serial interfaces supporting PCIe, SRIO, 10GbE, or Aurora implementation.

- Dual SFP+ ports for Fibre Channel or 10GbE
- Up to 410k optimized logic cells
- High-speed interface for PCIe Gen 1/2



Software Library Support

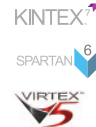
For easier development, Acromag function libraries greatly simplify the interface between our I/O boards and your application program.



XMC FPGA Modules with AXM Support

XMC FPGA modules add high-speed, multi-lane serial interconnects to a high-bandwidth PCI Express interface ensuring fast data throughput.

- Up to 410k optimized logic cells
- Up to 8-lane PCIe bus Gen 1/2 interface
- Plug-in I/O extension modules available (AXM)



AXM I/O Extension Modules

AXM multi-function extension modules add I/O to Acromag FPGAs. They plug right into the front mezzanine on the FPGA modules.

- Analog I/O, digital I/O and custom functions



FPGA Engineering Design Kits

These kits provide utilities to communicate with the FPGA. They help load VHDL code and establish DMA transfers to the CPU.

For more FPGA modules, please see: www.acromag.com/fpgas



PMC I/O Modules

PMC I/O modules are available in a variety of analog and digital I/O functions for a balance of performance, features, and price.

- Analog I/O, digital I/O, multi-function I/O, counter/timer, serial communication
- Rugged design with long product lifecycles
- -40 to 85°C extended temperature option



IndustryPack I/O Modules

IndustryPack plug-in I/O modules deliver mix-and-match flexibility and high channel density for custom space-saving combinations.

- Analog I/O, digital I/O, counter/timer, serial
- Available termination panels, cables, and adapters simplify system integration
- -40 to 85°C extended temperature option



PCI I/O Boards

PCI boards provide time-tested reliability with high-performance parts to withstand more demanding environments.

- Analog I/O, digital I/O, multi-function I/O, counter/timer
- Rugged design with long product lifecycles
- Available termination panels, cables, and adapters simplify system integration



CompactPCI I/O Boards

CompactPCI I/O boards implement high-performance components into reliable design, which is ideal for defense and industrial systems.

- Analog I/O, digital I/O, multi-function I/O, counter/timer
- Rugged design with long product lifecycles
- Available termination panels, cables, and adapters simplify system integration



Software Development Tools

For easier development, Acromag function libraries for Windows, Linux, VxWorks and other operating systems quickly integrate with your application.

- Easy-to-use C function routines (with source code)
- Demonstration programs exercise the software and I/O board before attaching your application

For more embedded I/O, please see: www.acromag.com/embeddedio



COM Express Carriers Type 6 Double Width

COM Express double width carrier boards feature a rugged design and save valuable space with a variety of expansion options.

- Interfaces: Type 6 COM Express modules, dual Mini PCIe/mSATA modules, and dual PMC/XMC modules
- -40 to 85°C operating temperature
- High-density Samtec SEARAY connectors provide all field connections



COM Express Carriers Type 6 Single Width

COM Express single wide carrier cards are built for rugged conditions and offer a variety of expansion options.

- Interfaces: Type 6 COM Express modules, dual Mini PCIe modules, and one PMC/XMC module
- -40 to 85°C operating temperature
- High-density Samtec SEARAY connectors provide all field connections



COM Express CPU Modules

COM Express modules feature a CPU and secure removable memory for use with a carrier card to provide custom and compact I/O.

- Type 6 interconnects
- Intel Core i7 or i5 CPU, 4th Gen (Haswell)
- Exclusive SODIMM hold-down mechanism secures up to 16GB of removable memory



Production Front Panels

Front panels are available for the single and double-width carrier cards, featuring MIL-DTL-38999 cylindrical connectors to help prepare for field deployment.

Accessories

MIL-DTL-38999 CPU peripheral I/O breakout cable, power cable, and cable connectors to complete field wiring the production front panels.



Engineering Design Kit and Development System

For easier development and testing, the break-out board routes all I/O signals from the carrier's high-density connector to standard peripheral connectors.

Get just the break-out board or have it mounted on a panel with cooling fans.



COM Express Carriers Type 2/3

COM Express carrier boards provide a variety of additional I/O for the Type 2 or 3 COM Express module it holds.

- Mini PCIe site, Compact Flash site with ejector
- ATX power connector

For more COM Express, please see: www.acromag.com/comexpress



SBCs	CPU	Memory	Comments
VPX Single Board Computers			
XVPX-6300 (3U, air-cooled)	Intel® Core™ i7 620UE (1.06GHz), 620LE (2.0GHz), or 610E (2.53GHz)	4GB DDR3 ECC soldered RAM; 8GB Flash	Profile A/B, extended temperature options
XVPX-6300 (3U, conduction)			Profile A/B, -40 to 85°C operation
XVPX-6300 (3U, REDI covers)			
VME Single Board Computers			
XVME-6400 (6U, air-cooled)	Intel Core i7 (2.4GHz) or Core i5 (1.6GHz)	Up to 16GB of DDR3L ECC RAM with SODIMM lock-down mechanism	Extended temperature options
XVME-6400 (6U, conduction)			-40 to 85°C operation
XVME-6300 (6U, air-cooled)	Intel Core i7 620UE (1.06GHz), 620LE (2.0GHz), or 610E (2.53GHz)	4GB DDR3 ECC soldered RAM; 8GB Flash <i>NOTE: 8GB RAM available on 610E only</i>	PO, extended temperature options
XVME-6300 (6U, conduction)			PO, -40 to 85°C operation
XVME-6200 (6U)	Intel Core 2 Duo L7400 (1.56GHz) or T7400 (2.16GHz)	Up to 4GB DDR2 ECC RAM	PO, extended temperature options
COM Express® CPU Modules			
XCOM-6400	Intel Core i7 (2.4GHz) or Core i5 (1.6GHz)	Up to 16GB of DDR3L ECC RAM with SODIMM lock-down mechanism	Extended temperature options

10GbE Networking	Ethernet Interface	Memory	Comments
XMC 10GbE Interface Modules			
XMC-6260-CC	Dual XAUI 10GBASE-KX4	External memory for storage of offloaded connection states and buffers	-40 to 85°C operation
XMC-6280	Quad SFP+ ports		-40 to 70°C operation

Mass Storage	Type/Format	Features	Compatibility
VPX Storage Solutions			
XVPX-9400	Raid controller module	Supports up to 8 SATA / SAS drives; Double fat-pipe (x8) PCIe interface	XVPX-6300 MOD3-PAY-1D-16.2.6-2
XVPX-9756	Bootable SATA / SAS drive module	Supports dual slim SATA drives or single 2.5" drive (rotating or solid-state)	XVPX-6300 MOD3-PER-1U-16.3.3-1 (PCIe) MOD3-STO-1U-16.5.1-2 (SATA)
VME Storage Solutions			
XBRD-9050	SBC expansion module	Accepts 1.8" SATA drive; USB; Ethernet; Serial	XVME-6300
XVME-9630	6U rear transition module	Allows for custom set of new connectors	XVME-6300
XVME-912	On-board carrier for Type I or II Compact Flash	Processor board can boot from Compact Flash	XVME-6200
XVME-913S	On-board carrier for 1.8" solid-state drive	Processor board can boot from drive	XVME-6200
XVME-990	6U rear transition module	Adds additional connectors, with or without PO	XVME-6200

FPGA Modules	Logic Cells	DSP	Comments
PMC / XMC Modules			
Xilinx® Kintex®-7 FPGA (High-Speed Serial I/O)	Up to 410k logic cells	Up to 1540 DSP48E1 slices	8 high-speed serial lanes; dual SFP+ ports
Xilinx Kintex-7 FPGA (AXM I/O)	Up to 410k logic cells	Up to 1540 DSP48E1 slices	8 high-speed serial bus lanes; plug-in extension I/O
Xilinx Virtex®-6 FPGA	Up to 365k logic cells	Up to 768 DSP48E1 slices	8 high-speed serial lanes; dual SFP+ ports
Xilinx Spartan®-6 FPGA	150k logic cells	180 DSP48A1 slices	32 LVDS; plug-in extension I/O
Xilinx Virtex-5 FPGA	Up to 155k logic cells	Up to 640 DSP48E slices	32 LVDS; plug-in extension I/O
Xilinx Virtex-4 FPGA	Up to 60k logic cells	Up to 192 XtremeDSP slices	32 LVDS; plug-in extension I/O
IP Modules			
Altera® Cyclone® II FPGA	20k logic cells	--	Up to 48 TTL, 24 RS-485, or 24 LVDS I/O

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Embedded Computing Solutions

I/O Boards	Inputs	Outputs	Comments
IndustryPack I/O Modules			
IP200 Series	--	Analog output; up to 16 channels	12 or 16-bit D/A; up to 100kHz
IP300 Series	Analog input; up to 20D/40SE channels	--	12, 14 or 16-bit A/D; up to 1MHz
IP400 Series	Digital input; up to 48 channels	Digital output; up to 48 channels	TTL, CMOS, ±60V DC, or differential
IP480 Series	Counter/timers; TTL or RS-232; up to 10 channels		16/32-bit; measure/generate; quadrature
IP500 Series	Serial communication; EIA/TIA-232/422/485, MIL-STD-1553, or CAN bus; dual/quad/octal		64-byte FIFOs; optional isolation
PMC I/O Modules			
PMC200 Series	--	Analog output; 8 channels	16-bit D/A; up to 100kHz
PMC300 Series	Analog input; up to 16D/32SE channels	--	14 or 16-bit A/D; up to 125kHz
PMC400 Series	Digital input; up to 64 channels	Digital output; up to 64 channels	TTL, 0-60V DC, bi-directional
PMC480 Series	Counter/timers; TTL or RS-232; up to 10 channels		16/32-bit; measure/generate; quadrature
PMC500 Series	Serial communication; octal 232/422/485		64-byte FIFOs; full-duplex;
PMC700 Series	Analog in (16D/32SE); Digital input (16)	Analog output (8), Digital output (16)	16-bit A/D & D/A; TTL I/O; 32-bit counter
PCI and CompactPCI I/O Boards			
APC300, AcPC300 Series	Analog input; up to 16D/32SE channels	--	14 or 16-bit A/D; up to 125kHz
APC400, AcPC400 Series	Digital input; up to 64 channels	Digital output; up to 64 channels	TTL, 0-60V DC, bi-directional
APC480, AcPC480 Series	Counter/timers; TTL or RS-232; up to 10 channels		16/32-bit; measure/generate; quadrature
APC700, AcPC700 Series	Analog in (16D/32SE); Digital input (16)	Analog output (8), Digital output (16)	16-bit A/D & D/A; TTL I/O; 32-bit counter

Bus Carrier Cards	Size	# of Slots	Field Connectors	Comments
Carrier Cards for IP Modules				
VME carrier cards	3U/6U VME	2 or 4 IP slots	Front or rear I/O; 50-pin or SCSI-2 connectors	VME64 support; -40 to 85°C operation
PCI carrier cards	Full/half-length PCI	3 or 5 IP slots	50-pin headers	-40 to 85°C operation
PCI Express carrier cards	Full-length PCIe	4 IP slots	50-pin headers	-40 to 85°C operation
CompactPCI carrier cards	3U/6U cPCI	2 or 4 IP slots	Front or rear I/O; 50-pin high-density connectors	-40 to 85°C operation
Carrier Cards for PMC / XMC Modules				
PCI carrier cards	Half-length PCI	1 PMC slot	Front or rear I/O	-40 to 85°C operation
PCI Express carrier cards	Full-length PCIe	1 PMC/XMC slot	Front or rear I/O; x4/x8 PCIe interface	Air-cooled
CompactPCI carrier cards	3U/6U cPCI	1 or 2 PMC slots	Front or rear I/O	-40 to 85°C or conduction-cooled
VPX carrier cards	3U/6U VPX	1 or 2 PMC/XMC slots	Front or rear I/O; x8 PCIe interface	Air-cooled, conduction-cooled, or RED1

COM Express [®] Carrier Cards	Size	# of Slots	Field Connectors	Comments
Carrier Cards for COM Express Modules				
Type 2/3 carrier card	Basic: 95x125mm	1 PMC slot	Front or rear I/O	-40 to 85°C operation
Type 6 carrier cards	Double: 200x165mm or Single: 125x165mm	2 Mini PCIe slots 1 or 2 PMC/XMC slots	I/O via high-density Samtec SEARAY connectors	-40 to 85°C operation, Conduction cooling options
Type 6 carrier card front panel	Double or single width	--	MIL-DTL-38999 cylindrical connectors	
Type 6 carrier card engineering design kit	--	--	Delivers all signals from the carrier's Samtec SEARAY connector through the EDK connectors	I/O connector break-out board only
Type 6 carrier card development system	--	--		EDK break-out board mounted to panel with fans

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