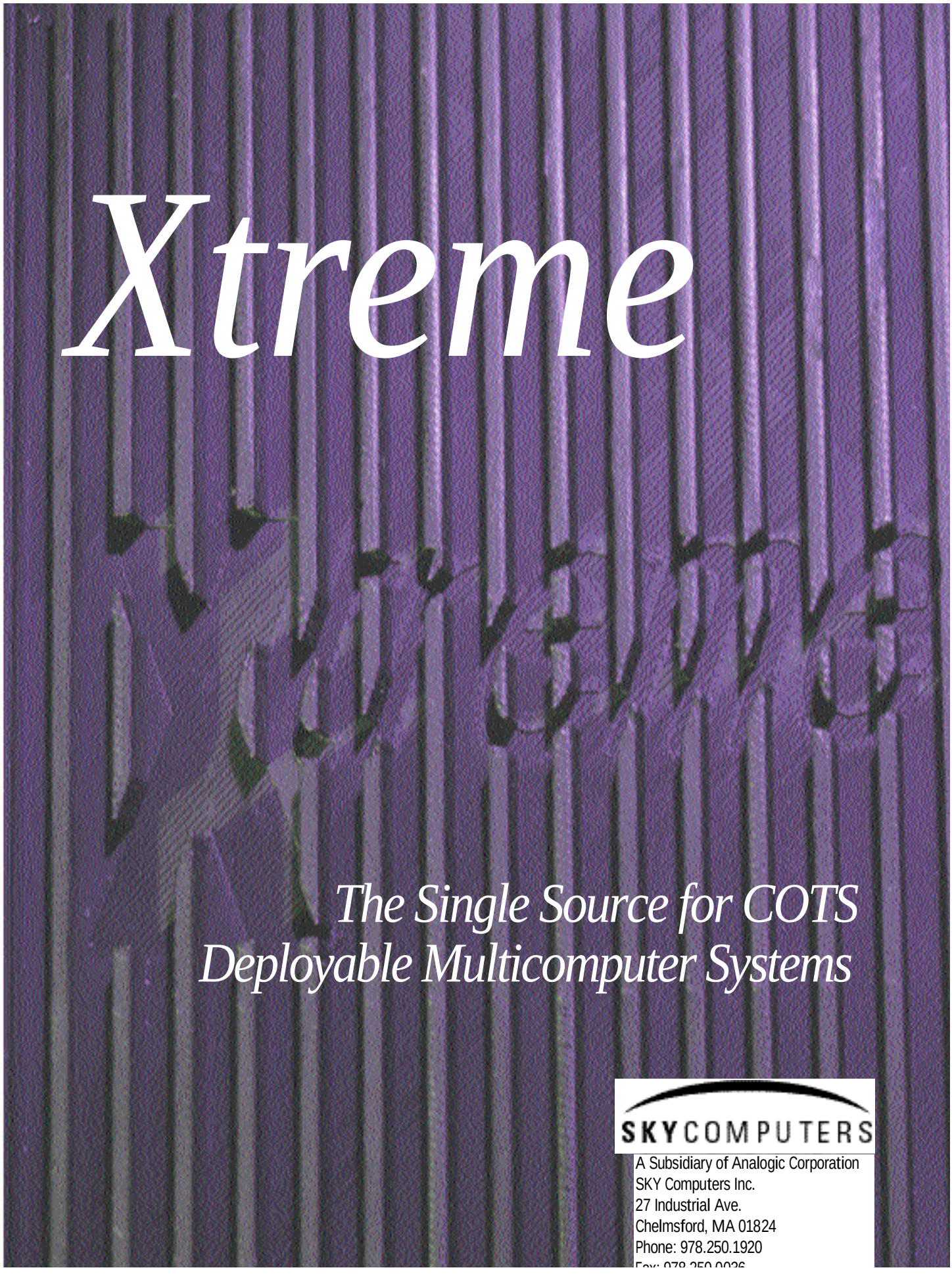

Xtreme

The Single Source for COTS Deployable Multicomputer Systems

SKYCOMPUTERS

A Subsidiary of Analogic Corporation
SKY Computers Inc.
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Chelmsford, MA 01824
Phone: 978.250.1920
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Xtreme Family Systems

The Xtreme™ family of multiprocessor boards is the heart of SKY's embedded signal processing solutions. SKY delivers fully integrated sub-systems built from commercial-off-the-shelf components, but designed specifically for your application. SKY configures the rugged chassis, CPU boards, standard interconnect fabrics, high performance multiprocessor boards, compilers, middleware, and software development tools, as well as the storage and peripherals, as the total solution configured for your application – complete, tested, and ready to run.

The core of the SKY Computers' Xtreme family is the Flexible Multiprocessor Architecture (FMA). FMA is a superior architectural design that creates an optimum balance. Balance between CPU and I/O performance. Balance between a robust API, and ease of use. And it provides a bridge to the technologies of tomorrow. FMA is the risk-free architecture.

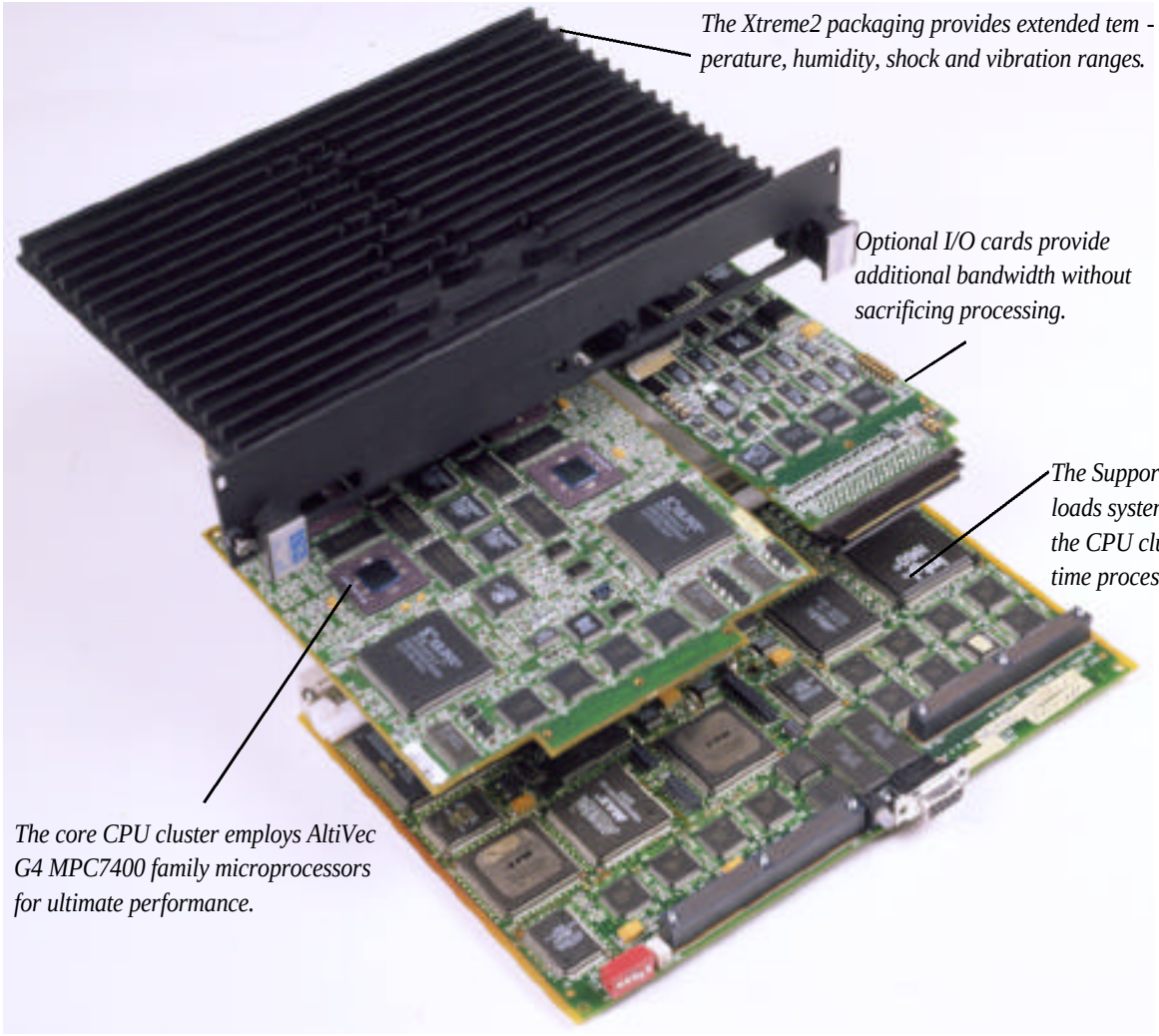
SKY FMA utilizes the AltiVec PowerPC family of processors as its core CPU. FMA currently employs the MPC7400 G4 family of processors with a planned migration path to the G6 and beyond. Supplementing the core CPU Cluster is an FMA exclusive: the Support Processor (SP). The SP microprocessor handles all of the system functions, leaving the CPU Cluster free to handle the real time processing requirements of the system, resulting in the most efficient performance available. The large flash memory of the SP provides a fast boot that gets a whole system up and running lightning fast. One SKYsystem™: 16 boards, 256 processors, up and ready in 12 seconds.

Software design, optimization, and debug for multiprocessor systems can be complex and demanding. With some architectures, each new processor or interconnect requires a complete new architectural design and a complete rewrite of the software. SKY FMA is an open systems architecture with a standards-based API that protects you from rewrites and redesigns. Software moves transparently from generation to generation consistently delivering more performance.

SKYvec compiler provides programmers with a platform independent development environment which automatically handles the hardware dependent operations. With advanced features such as automatic vectorization, crucial to maximizing AltiVec performance, the SKYvec™ development environment can save up 30-50% of development effort vs. competitive options. SKYvec is easy to learn and program, requiring very little specialized training beyond basic UNIX programming. Faster, easier development combined with code portability across the lifecycle allows you to meet your customers' demands now and provide a migration path to tomorrow.

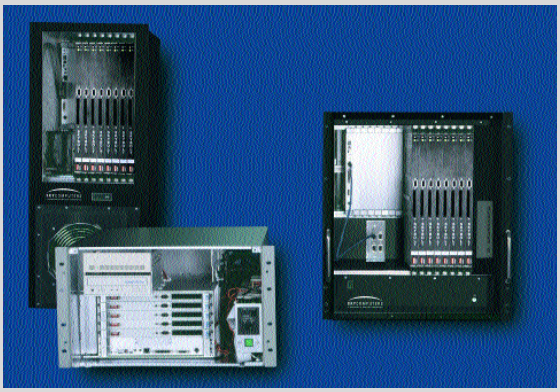
The industry has realized the advantages of packet switched architectures and is moving toward using serial packet switched interconnects at every level of system design. SKY Computers has been using packet switch technology in its SKYchannel interconnect since 1995. Our customers have experienced both its performance benefit and its ease of implementation. Future SKY product generations use the ANSI standard SKYchannel™ protocol layered onto InfiniBand once again eliminating the need for costly and time consuming rewrites and redesigns.

	Commercial	***Xtreme1***	***Xtreme2***
Board Temp: Operating Conditions	0ºC to 40ºC inlet 3 cfm air flow	0ºC to 55ºC inlet 3 cfm air flow	-40ºC to 71ºC inlet 5 cfm air flow
Storage	-40ºC to 85ºC	-40ºC to 85ºC	-55ºC to 85ºC
Humidity: (non-condensing) Operating	5 to 95%	0 to 95%	0 to 95%
Storage	5 to 95%	0 to 100%	0 to 100%
Vibration: Sine	NA	2G peak 15-2KHz	10G peak 15-2KHz
Random	NA	.005g^2/Hz 15-2KHz	0.04g^2/Hz 15-2KHz
Stiffening Frame:	NO	NO	YES
Shock:	NA	20g peak half sine 11 msec	30g peak half sine 11 msec
IC Temperature:	Commercial	Commercial/Industrial	Commercial/Industrial
Conformal Coating:	NO	YES	YES



SKYsystem Building Blocks

- *Multiprocessors*
  - *– Merlin AltiVec-based*
  - *– 4 processors per slot 6U*
  - *– 16 processors/slot 9U*
- *Chassis*
  - *– AP Labs, APW, Miltron, Mektron*
- *Slot 1 Controllers:*
  - *– Force, Motorola, Themis, Radstone*
- *I/O and Storage*
  - *–ICS, Myriad Logic, Systran, Vmetro*
- *Operating Systems*
  - *–Microsoft, Sun, WindRiver*
- *Software*
  - *–GEDAE, ETNUS*



Board Level FMA

- *Uses Merlin multiprocessors*
- *CPU Clusters Dedicated to Application Performance*
- *Support Processor (SP)*
  - *– dedicated system resource maximizes effi - ciency*

FMA for Deployment

- *SKY Supplies Both Commercial and Rugged Multiprocessors and Systems*
- *Three levels of Ruggedization*
- *Technology transfers and Reformatting of Standard Designs Available*
- *Easy Software Migration to Deployment; Recompile and Run Fully Optimized*
- *Lifecycle Support, Costing and Management Provided by SKY and Analogic*

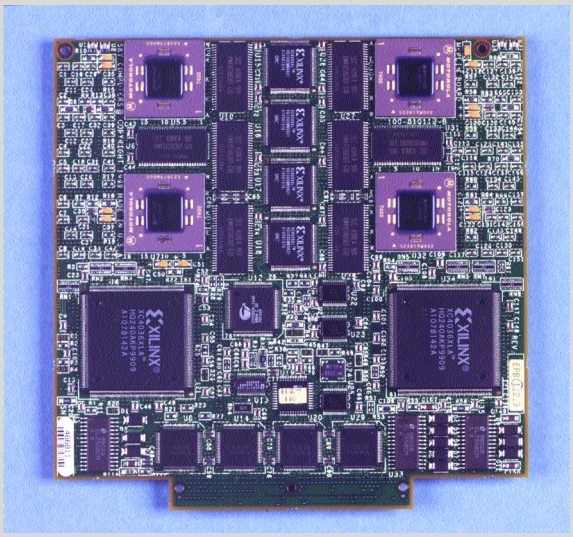
The FMA Software Architecture

There are three fundamental requirements of the software development toolkit in a performance-based multiprocessor. First, it must take full advantage of the hardware by optimizing the application code. Second, it must be portable from supplier to supplier and product generation to product generation. Finally, it must be easy to learn and use. Most multiprocessor suppliers provide some of these requirements, only SKY Computers provides all three.

The SKYvec software development tools simplify code development for large multiprocessor systems by automating many of the processes which otherwise would have to be designed or managed by the programmer. SKYvec eliminates the need for complex and costly software migration and extensive training classes by making development easier than ever before. Depending upon the complexity of the application the software development effort can be reduced 30-50% using the standard SKYvec API.

SKY Computers has reduced the learning curve and the time to develop application code by simplifying and automating low level optimizations and tasks. SKYvec provides a suite of development tools that simplify the programming effort without compromising performance. Sophisticated porting and development tools virtually eliminate complex tasks and training. The ability to meet program schedules and your customer's demands may rest with the selection of the software development environment. Compare portability, performance, and simplicity. Put SKYvec to the test in your next program.

Merlin Multiprocessor



Merlin Specifications

Performance	10.6 GFLOPS per 6U /42.4 GFLOPS per 9U slot
AltiVec™ MPC7400™ PowerPC Processor	
Quantity	4 per Merlin
Frequency	333 MHz
L1 Cache	32k instruction, 32k data
Floating Point Unit	IEEE 754 single- and scalar
Fixed Point Units	Dual 32-bit Integer Units
Vector Instructions	Full 128 bit AltiVec implementation 8, 16, 32 bit integer, single -precision floating point
L2 Cache	
Size	2 MB Backside
Bandwidth	64-bits wide @ 333 MHz
Memory Architecture	
Size	64, 128, or 256 MB
SDRAM per processor	
Bandwidth	64-bits wide @ 83.3 MHz
Daughtercard Interface	
Type	SKYchannel Packet Bus(ANSI/VITA 10-1995)
Data Size	64 bits data per word Up to 128 data words per packet
Throughput	320 MB/sec
Addressing	44-bit addressing, 16 Terabyte address space
Physical	
Dimensions	6" x 6" daughtercard
Slot-to-Slot Spacing	.80 inches (including motherboard)
Net Weight	.5 pounds

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