

 **Voice  
board**  
CORPORATION



*Performance Focused  
Embedded Communications  
Solutions*

## Commitment to Leadership...

### A Message from our President...



At Voiceboard, we know that our success follows from our commitment to your success. Our mission is to partner with our customers to achieve best of class and first-to-market products. We are committed to continually expand our technology to minimize the time necessary to bring new products to market and reduce overall product lifecycle costs.

Many leading OEM's and System Integrators have successfully launched next generation communications products incorporating Voiceboard solutions as key building blocks. We invite you to contact one of our application engineers to discuss your product requirements, or to arrange a get-acquainted factory tour.

Looking forward to working with you,

Gregory Peacock,  
President and CEO

### Mission Statement

**Voiceboard's mission is to provide customizable hardware and software solutions to the global embedded communications market, enabling our customers to achieve first-to-market and best of class product offerings. Our long-term commitment is to continually enhance our product performance and technical capabilities in order to reduce time to market and the integration effort of our customers.**

### Voiceboard Corporate Profile

- Manufacturing and delivering superior hardware & software technology supporting both cPCI & VMEbus for commercial and military communications applications.
- A leading provider of fully integrated embedded solutions to OEM's targeting military and defense communications markets.
- Embedded hardware and software products targeted towards OEM's and system integrators building next generation convergent voice-data communications systems.
- Technology roadmap and engineering development partner for customized, embedded communications solutions.
- Extensive compliment of embedded software supporting military communications, VoIP media gateways, wireless infrastructure and network service provider applications.
- Company focus on broadband connectivity, DSP based media processing, on board switching and routing, fully integrated signaling protocol stacks and interworking software products.



# Leadership In Technology...

## Over 15 Years of Innovation

Over fifteen years ago, Voiceboard was the first embedded communications products company to adopt industry standard switched TDM backplane bus technology. In 1999, Voiceboard's Mediapro II product family again set technology standards for VoIP GateWay products. This heritage of technological leadership remains a vital part of our corporate values.

Today, Voiceboard leads the way in developing new architectures for convergent tactical military communications systems. Voiceboard MediaPro communications products are rapidly becoming the performance standard against which alternative solutions and products are measured.

Voiceboard's customers are industry trend setters; their needs help define our product evolution and refinement. This "win-win" business relationship model leads to a high degree of customer satisfaction and drives Voiceboard to the forefront of communications technology.

### Carrier Class Solutions

Voiceboard products are particularly targeted to meet the requirements of our Carrier Class customers. Performance, scalability, High Availability and speed of deployment are key requirements fulfilled by Voiceboard products.

### Engineering Excellence

Voiceboard Corporation has recruited leading engineers with experience in key communications disciplines to ensure that our products include the latest technology. Over 50% of Voiceboard employees are engineers with advanced degrees.

### Highest Performance Value

MediaPro II product family performance objectives are to provide the industry's greatest capacity density, lowest power consumption and flexibility per chassis slot, resulting in superior performance/value metrics.

### Highly Scalable Architecture

MediaPro's embedded Real-Time OS handles all low-level signaling and relieves the host CPU of real-time processing tasks. As a result, ports, spans, DSP capacity and new functionality may be added or expanded without the performance and throughput degradation that typically results when a chassis host CPU is employed for data plane processing tasks.

### High Availability Solutions

MediaPro II products operate in Packet Switched Backplane (PSB) mode, eliminating the single points of failure present in traditional backplane solutions. PSB, coupled with redundant packet networks and adherence to "hot swap" industry standards, can achieve greater than the "5 nines" standard for high availability.

All MediaPro II products may also operate as standalone single board embedded solutions. In this mode, features supporting traffic load sharing and real time failover response achieve straightforward fault tolerant performance.

### Broad product Line

- Broadband network interfaces
- Analog telephone interfaces
- Radio controller boards
- VoIP GateWay
- DSP mezzanine resource
- Customer development environment for DSP software
- SS7 and ISDN protocol stacks
- H.323 and SIP VoIP stacks
- MC<sup>2</sup> call processing software applications platform



### High Reliability Design

Voiceboard designs longevity and reliability into every product we make. MediaPro II products exhibit low power consumption, reducing heat, extending hardware lifetimes and supporting operation in hostile environments.

### Portable Driver Architecture

Voiceboard drivers are portable across most popular operating systems.

### DSP Media Conversion Libraries

MediaPro offers a full complement of off-the-shelf DSP libraries supporting a broad range of communications applications, including VoIP, radio communication, data modem and FAX servers, call processing, intercom and conferencing systems.

### System Integration

Voiceboard provides system integration activities through design, documentation, example application code, test software, technical training classes and development tools. Source code is available for drivers, protocol stacks and specialized DSP support software.

### Technical Training

Voiceboard offers on and off-site formalized technical training, as well as highly specific "hands-on" hardware and software applications training. Voiceboard tailors training to meet customer needs.

### Custom, Reduced Risk Solutions

Voiceboard engineers are available to assist our customers with proof of concept studies and initial system design proposals. The result is a clear, well-charted path through project development, test and system integration to ultimate deployment.

### MC<sup>2</sup> Application Software

Voiceboard's Professional Services group offers customizable application software capable of implementing a wide variety of real time communications applications for military, government, enterprise and commercial carrier services.

## MediaPro<sup>®</sup> Product Family Overview...

Voiceboard's MediaPro line of *total embedded solution*<sup>™</sup> hardware and software products are the building blocks used to implement a variety of innovative new convergent voice-data applications in the military, wireless/cellular, VoIP gateway, universal messaging, call center and signaling gateway markets.

MediaPro brings superior performance, flexibility and reliability to OEM's and system integrators implementing high capacity mission critical communications systems. MediaPro *total embedded solution* products feature architecture and supporting embedded software designed to help the developer/engineer bring best of class products to market reliably and quickly.

MediaPro 6U cPCI or VME boards are integrated with an extensive compliment of embedded software. MediaPro boards support 2 sets of PMC mezzanine cards for adding optional DSP, network access and embedded processor resource capabilities.

MediaPro products meet industry standards for open architecture systems. Our VME products meet the stringent functional and quality requirements of industrial operating environments.

### Product Description

Voiceboard's MediaPro hardware and software products integrate broadband network connectivity, signaling protocol software, DSP media conversion and switching/routing technologies into single board, high performance cPCI and VMEbus communications solutions.

High-density T1/E1/J1 Wide Area Network interfaces are available today, with T3/E3 and OC3 bandwidths scheduled for future delivery. DSP media processing software covers VoIP, V.90 modem, fax, universal messaging, conferencing, radio interface and other specialized applications. A complete repertoire of real-time software is available to implement signaling and Inter-Working Functions (IWF) between SS7, ISDN and VoIP gateways.

Voiceboard's MC<sup>2</sup> software is a platform independent call control application executing on a chassis host CPU card or networked server(s). MC<sup>2</sup> interfaces with MediaPro hardware signaling and resource control functions via Voiceboard message based API's. The core of MC<sup>2</sup> is a highly configurable call processing state machine written in portable C++, coupled with hardware configuration and scenario scripting software.

Voiceboard MediaPro *total embedded solutions* hardware and software are deployed in the following demanding applications:

- **Wireless and Cellular**

Base Station Controller  
Global SS7 compatibility  
InterWorking Function

- **3<sup>rd</sup> Generation Call Centers**

Integrated IVR and call routing  
SS7 stack support  
IP or wired agents

- **Media Gateways**

Packet Voice  
Video Streaming  
Fax/Data

- **Unified Messaging Systems**

Fax & Web Capability  
Speech Recognition  
Voice Messaging

- **Signaling Gateways**

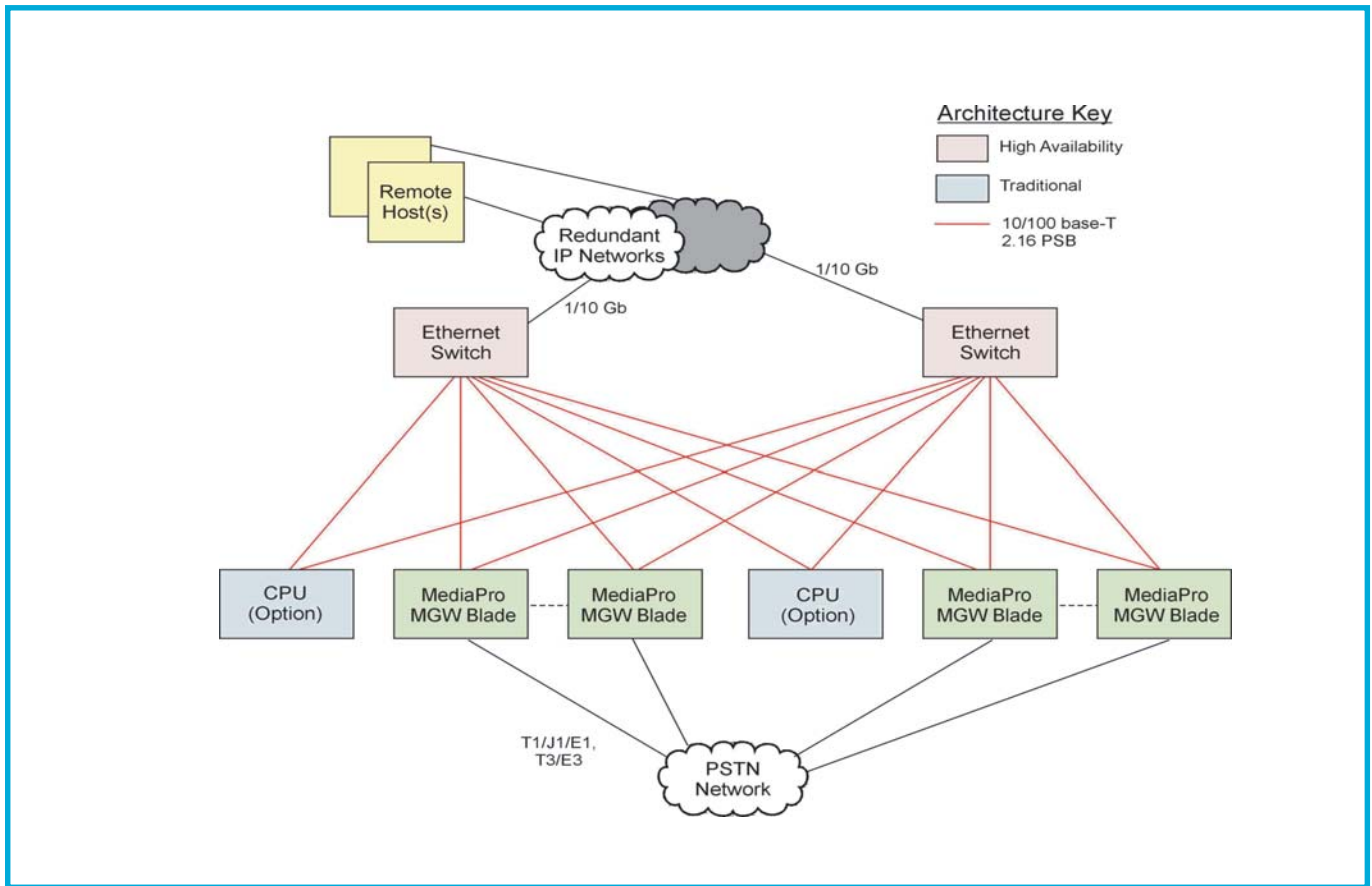
SS7-to-ISDN  
SS7-to-IP  
Legacy Systems Upgrades

- **Military Communications**

COTS Solutions  
IP to headsets/radio  
Voice recording/compression  
PBX and intercom



## A Next Generation Product Architecture....



### MediaPro Architecture: Significant Improvements in System Performance

MediaPro's single board *total embedded solution* architecture reflects a revolutionary new step in performance for telecommunication systems. As an industry first, all real-time functionality may be off-loaded from the host CPU. Not only is payload traffic off-loaded from the host and system bus, but also all IP protocols, upper layer signaling, stack and interoperability software reside as embedded PowerPC-based software. The host CPU needs only to manage the system and run applications without the limitations imposed by running the real time portion of an application on the host.

### A Completely Scalable Solution

The MediaPro board runs all software modules under an industry standard RTOS, and supports a client server distributed computing model. Additional span or DSP resource boards may be added anytime, up to the back-plane capacity limit, without negative impact on application performance.

### Significant Savings in Hardware Acquisition and Life-cycle Costs

Every MediaPro board may be expanded via additional PMC modules to support necessary new functionality or port expansion requirements. MediaPro's high-density architecture allows a single board to replace several less capable boards, and, in large installations, reduce the number of chassis required.

### Reduced Development Costs and Time-To-Market

MediaPro's extensive complement of embedded software includes low-level signaling, payload data conversion, bus control, stack protocol handling, and MC<sup>2</sup> application software layers, all running under a high performance RTOS. Very rapid design, test and deployment cycles result, enabling our customer to bring quality products to market quickly.



## Unique Embedded Solutions...

**Voiceboard solutions are simpler solutions...  
We help OEMs bring products to market quickly,  
by offering them these significant advantages...**

### Superior Performance - Voiceboard offers industry's highest port density and embedded software content.

- Extensive libraries of embedded software
- Off-loads all real time functions from host application processor
- Intra-application processing speed is significantly enhanced
- Eliminates system bus data transfer latencies

### Highly Scalable Architecture - Voiceboard MediaPro product architecture is scalable without performance degradation.

- Eliminates host CPU processor and system bus bottlenecks
- Each board is self contained, allowing for unlimited scalability
- All software is scalable without the necessity for rewriting code
- Avoids the need for "fork lift" upgrades

### Reduced Development Time and Costs - Extensive complement of embedded software eliminates the need for expensive development or stack porting efforts.

- Simplified software applications development
- Customer application software supported on easily customizable processor
- Minimized need for specialized telecom engineering skills
- On board integration of media conversion, signaling and switching functionality

### Reduced Acquisition and Total Life Cycle Costs - Our OEM customers realize significant savings.

- Modular hardware may be tailored to meet your economic requirements
- One board replaces multiple boards
- Industry standard protocols may be incorporated as they become available
- Simplified field configuration

### Faster Time to Market & Rapid Product Deployment - Our "first-to-market" strategy provides the tools and features needed to get a quality product to market quickly.

- Entire protocol stacks running on embedded MediaPro processors
- Customized development support and training
- Extensive compliment of media conversion DSP software
- MC<sup>2</sup> call processing applications software
- Interoperability software available

### Superior Reliability - Field-proven, high MTBF products.

- Simplified High Availability (HA) configurations
- IP Platform eliminates single point of failure
- Reduced hardware content
- Lowest power implementation and superior MTBF



## Continual Process Improvement...

### Quality Focus

Our manufacturing and quality control organization is dedicated to providing high quality products and services in a timely manner. Our corporate culture is an environment that promotes pride, personal responsibility and the reward of excellence. Voiceboard's Quality System is compliant with ISO 9001 Standards for both development and manufacturing cycles.



### Manufacturing / Operations / Testing



Voiceboard maintains strict Q/A and manufacturing control systems. A fully integrated MRP system allows a smooth flow of material through incoming inspection, all phases of work-in-process, finished goods inventory and final customer shipments.

Voiceboard maintains an audit trail of final test and inspection records, all corrective/preventive action and calibration steps. A detailed serial number history database is maintained to insure the current revision of any board in the field is known and defined.

All boards are subjected to incoming inspection, functional test, and final inspection. To satisfy customer specifications, it is possible to specify 100% functionally tested products under burn-in conditions.

### Support & Maintenance Services

Voiceboard Technical Support is designed to facilitate and speed our customer's application development projects. Our support staff is trained to provide customers with courteous, responsive, and technically accurate pre and post-sales support. Our staff will provide you with needed technical support during your development, system integration and test, through the manufacturing processes and deployment.

Voiceboard offers after warranty maintenance programs and software support. We offer customized nationwide support with on-site technicians, phone hotline, e-mail, and even interactive Internet support services.

Voiceboard offers annual software maintenance contracts covering all new version releases, enhancements and upgrades. Extended hardware warranty plans are also available. Depot repair is provided from our headquarters location on a time and materials basis for out of warranty hardware.



### Facilities

Voiceboard occupies a 24,000 square foot facility in Oxnard, CA. We are located one block away from Oxnard airport, or approximately an hour from either the Santa Barbara, LAX or Burbank airports in Southern California. Our headquarters' facility in Oxnard contains all of our design, engineering, test, production and support staff.



473 Post Street  
Camarillo, California 93010  
USA

Tel: 805-389-3100 Fax: 805-389-1611

<http://www.voiceboard.com>

Publication number BR-1003-12-04

© 2000-2004 Voiceboard Corporation. All rights reserved.