

# COMBINED MEDIA SYSTEM FOR RECORDING STUDIOS

Datasheet

**PROVIDING SOLUTIONS FOR TOMORROW** - SINCE 1993



## **Project objective**

Develop firmware for 7 modules of the high-end media system running on Atmel SAM7 processor and Xilinx FPGA, providing multi-optional data routing over the fiber optic. Develop a PC-based application for modular system design, set-up, monitoring, and control. These activities were performed as the resumption of the terminated project and were expected to deliver ready-tomarket high-end media product.

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### Result

The developed firmware provides real-time seamless operation of the 7 components of the combined media system both together and separately. The delivered platforms support redundant fiber optics commutation logic and provide digital signals I/O, conversion, and routing of the versatile media content, such as professional audio and video, intercom, Ethernet, RS422/232/485, and TTL data with up to 192kbit/sec sample rate. The desktop app running on Windows and MacOS allows for seamless design, scalable implementation, and full control of the modular media system.

#### Scope of work

- Real-time performance firmware for system controller for managing communications via the onboard Ethernet controller and handling selected board-related responsibilities
- Firmware for 16-channel microphone preamp with 2 connectors to manage the connection between the client's system and 3rd party consoles
- MUX (multiplexor) board firmware for combining and transmitting multiple signals over a common medium
- $\,$  The front panel of different versions for the LED boards and button control support
- MADI board firmware for transmitting multiple channels over a single cable and encoding audio metering information for display
- Ethernet video board firmware to process all communications of 2 Ethernet ports and composite video I/O packages for transmission
- Irrmware for the intercom board to process all inputs and outputs for analog audio data.
- TCP/IP stack and the client's proprietary protocol implementation for remote network configuring and monitoring
- 🚸 Support for star, daisy chain, ring, and hybrid network topology
- Management app development. Network map representation and creation, online to offline modes, real-time audio data, and network status display; multiview support and customizable layout
- Plug-in support for new types of audio devices
- Board, device, and system-level tests, beta testing support. Knowledge and technology transfer onsite

#### Activities

- Requirements definition
- Software development
- Long-term support
- Ocumentation review and updates Board, Device, and System testing
- Firmware development
- Ocumentation creation



## About the project

#### **Technologies**

- 🚸 IAR 5.4
- ♦ Xilinx ISE 11/12.1/12.2
- 🚸 MS Project
- 🚸 SVN
- MS Office tools
- ♦ C\C++

#### **Project size**

- ♦ 3 Software Engineers
- 1 Hardware Engineer

♦ C#

IAR embedded workbench

🚸 MS Visual Studio 2010



Duration

#### Platforms

- RTOS
- Windows
- MacOS