

# PRO AUDIO REVIEW

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## First Look

# Axia Livewire

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**A**xia's Livewire is the latest in the growing trend of networked audio. Made to work on an existing LAN/WAN or a private network, Livewire comes in a variety of processing and breakout boxes designed to provide maximum flexibility in networked distributed audio.

The system is comprised of seven components ('interface nodes'); an analog 8 x 8 terminal, router selector, AES/EBU terminal, microphone terminal, GPIO terminal, mixed signal terminal and studio mix engine as a first offering. The product ships with a CD-ROM with over one hundred pages of comprehensive information stemming from audio specifications, to implementation, settings and a FAQ section.

Moving audio further along the Ethernet evolutionary trail, Livewire aspires to leverage a facilities' current network investment using existing or inexpensive routers, switches and hubs to achieve a flexible facility-wide audio system, negating the need for proprietary audio only hardware. Along with audio, the Livewire system employs XML for remote control and operation of equipment. And any PC-based audio has the ability to connect directly to the network allowing limitless possibilities for multichannel broadcast and file manipulation. The system uses uncompressed audio 48 kHz/24-bit PCM encoding, and Axia reports that their interface nodes have more than a 100 dB dynamic range with a <0.005% THD and a headroom of 24 dBu. Using a system-wide synchronization clock, the system provides input-to-output latency of less than 3ms, including conversion time.

The system offers two data streams; Live streams and Standard streams. The Live streams are the small, fast packets and require dedicated hardware to allow low latency "live" monitoring of sources while the standard streams using RTP/IP are used to communicate with PC based audio applications where delay does not create a problem. By installing the PC application PC Audio and Direct Connects Audio, and deploying a few nodes, one can create a PC-based router control package which can be centrally managed or in a wireless LAN, from anywhere in the facility.

### THE NODES...

Let's take a closer look at the nodes... Each of the nodes is housed in a 1RU silver-faced box with I/O metering, status LEDs and stepped control buttons.

The analog 8 x 8 node has eight balanced inputs and outputs with more than 100dB dynamic range, <0.005% distortion, headroom to +24 dBu. Software-controlled gain lets you trim-adjust to accommodate different levels and provides front panel LED audio level metering. The AES/EBU Node has eight AES3 inputs and outputs. An input can be used to sync your Livewire network to your house AES clock, if desired. The Microphone Node has eight microphone inputs with high-grade preamps, phantom power, and eight balanced line outputs. This unit is intended mainly for on-air studios. The Router Selector Node emulates the function of traditional x-y audio router controller, but includes onboard input and output in both analog and AES3 digital forms.

The LCD presents a list of active audio channels, which are selected with the adja-



cent knob. Programmable "radio buttons" offer immediate access to often-used channels. This unit is intended for use of equipment room monitoring and production studio or newsroom audio interface. It can also be used as a test instrument to check and generate audio streams. The General Purpose Input/Output Node (GPIO) is an interface for parallel closures and has eight DB-15 connectors, each with five inputs and five outputs. It can be used to interface to the control of CD players, delivery systems, on-air lights, or anything that uses a simple parallel control. The SmartSurface power supply also offers identical GPIO functionality.

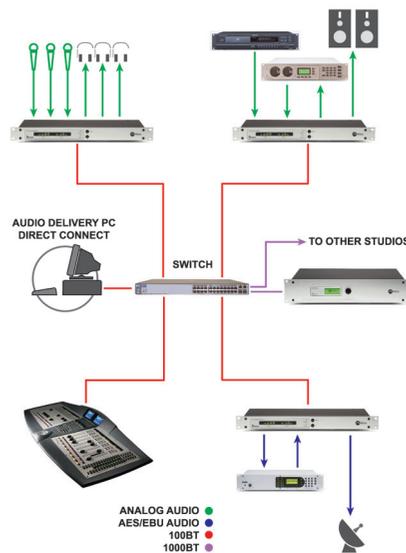
### STUDIO ENGINE

The Studio Engine is a 2RU rackmount processor designed to add console functions to a Livewire audio system. The processor performs all the mixing and signal processing functions that are typically performed by an audio console. Axia is quick

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to point out that although the Livewire-based routing system can be used with any traditional console, integration with the Studio Engine brings many advantages and is made to interface with the Telos SmartSurface or any other Studio Engine compatible control surface.

The Livewire Windows Suite is the software that is used to interface your PC audio applications and the Livewire network. There is an 8in/8 out driver that interfaces 8 inputs and 8 outputs and provides audio transmit and receive and control functions. The PC Router Selector application is an interface that displays and selects Livewire streams, a software version of the Router Selector. The selected audio is sent to any audio application that works with standard Windows sound cards. The Preview function lets you listen directly without another application. The Pathfinder PC router control application developed in cooperation with Software Authority, is used to control a distributed Livewire audio system as if you were using a traditional centralized audio router. It's a client-server type application in which the server communicates with all of the nodes. The GUI looks easy to navigate and has the ability to create presets that can be easily stored and recalled.



**Livewire's routing diagram**

As if this isn't enough, the system's channel and name feature allows you to identify and name streams on as many as 32,767 channels. Text names can be up to 24 characters and will be the name that will appear on the Router Selector's LCD. Although many devices cannot show all the characters, most will truncate the name for display purposes. Although a number of

items can be programmed from the front panel of the hardware nodes, the nodes' detailed configuration tables are accessed using a simple web browser. The node's webpages provide a point and click access to parameters and setup information.

There have been many offerings lately for networked audio, most of which work on a closed network. Axia's attempt at using the existing LAN is something that other systems such as telephone and security are already doing. We have already raised the bar of high-definition audio with 192 kHz/24-bit converters. I would have liked to see this resolution available on the Axia product especially for studio use. Hopefully we will continue to see a trend in networked audio towards higher definition for increased resolution.

For more information contact Axia Audio at 216-241-7225, [www.axiaaudio.com](http://www.axiaaudio.com).

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