NorthStar Studios Upgrades Infrastructure for 3G

CUSTOMER
NorthStar Studios

CHALLENGE
Streamline and upgrade for 3G, with 1080p60 and 3D capability

SOLUTION
A new 3G facility infrastructure from Grass Valley, a Belden Brand
NorthStar Studios, a full-service HD production provider based in Nashville, Tennessee, sought to upgrade its infrastructure for 3G production. Based on a 16-acre campus, NorthStar Studios offers a wide mix of production, post-production and multiplatform broadcast delivery services for major networks and cable channels.

“We have installed a 3G infrastructure capable of 1080p60 and 3D operation. The core components include an NVISION 8500 Hybrid router and Grass Valley 3 Gb/s distribution and conversion equipment,” explains Mike Arnold, Vice President Engineering and Operations at NorthStar Studios.

“The built-in audio processing capability of the NVISION 8500 Hybrid router has really revolutionized the way audio signals can be handled. External de-embedders and embedders are no longer required, so signal paths can be a whole lot simpler.”

The NVISION 8500 Hybrid router at the core is configured 234x234, and the frame can be readily expanded to 288x576. The router’s audio processing capability enables de-embedding, shuffling, breakaway and re-embedding within the frame. This integration avoids video/audio latency issues, and saves space, cabling and costs.

The network operations signal management system is based on the Densité modular signal processing for conversion, loudness control, AFD management, channel branding and automatic changeover switching. The 3G/HD/SD signal processing is performed using XVP-3901 modules, which perform up/down/crossconversion and audio and AFD processing. These modules also prevent excessive loudness variation between programs and channels using Grass Valley’s automatic loudness control (ALC) and they ensure that HD feeds are properly formatted when downconversion to SD is utilized by NorthStar Studio affiliates.

“With this upgrade, our entire network origination platform is now considerably more compact and efficient, making space for continued expansion,” explains Mike Arnold.

NorthStar Studios began investing in Grass Valley systems with the installation of a Kaleido-X multiviewer, when the facility started its transition to HD. The Kaleido multiviewer system has now been expanded and several Kaleido-X16 frames have been added to support three production control rooms plus multiple displays in the Network Operations Center, the heart of the company’s network origination business.

“We’ve worked closely with the Grass Valley team on this project, and we’ve received valuable input from the company’s product management, as well as sales, support and engineering groups,” added Mike Arnold.

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Mike Arnold, Vice President Engineering and Operations at NorthStar Studios

Typical Use of Hybrid Routing for More Streamlined Signal Management

Traditionally, production and broadcast facilities have used dedicated digital video and audio routers plus external de-embedders/embedders for signal management. This equipment has provided the ability to overcome typical signal problems like audio channel mismatching. However, this approach has now been superseded by the NVISION 8500 Hybrid router, which integrates digital video/audio routing and 16-channel de-embedding/embedding and breakaway. This functional integration saves costs, as well as space, weight and power. It also eliminates audio to video latency problems due to external de-embedders/embedders, while also streamlining the workflow and minimizing cabling.

The NVISION 8500 Hybrid router performs audio processing using Hybrid input, crosspoint and output modules, which fit inside a single frame alongside regular (non-audio processing) modules. By using Dynamic Hybrid Pathfinding, the router can perform audio processing across all its video inputs, with just a small portion of its matrix equipped with input, crosspoint and output cards capable of audio processing. The Dynamic Hybrid Pathfinding process automatically routes signals via the audio processing modules whenever required, under manual or automated control. This architecture promotes optimal cost-efficiency by reducing the requirement for more expensive Hybrid modules, without impacting overall functionality.
Streamlined broadcast infrastructure: single rack with NVISION 8500 HYBRID router with integrated digital video/audio routing and de-embedding/embedding.