

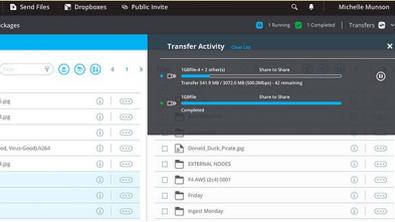
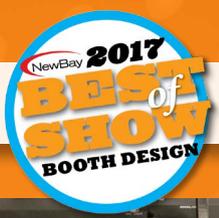
NewBay

2017

BEST of SHOW

Special Program Guide Showcasing Nominated and Winning Products as Featured at the NAB Show

NEW CATEGORY



TVTechnology

digital VIDEO

VIDEOEDGE

RADIOWORLD

Radio

prosound news

SOUND & VIDEO CONTRACTOR

Government VIDEO

Take a Virtual Tour of New Products at the NAB Show

Also this year, our first winners for Booth Design!

“What was new this year at the NAB Show?” It’s a question you hear all the time, and so do we.

This NewBay Media Best of Show Program Guide is a super way to learn about new products introduced at the spring convention for TV/video, radio and pro AV professionals.

This digital guide features all 293 nominees that participated in the 2017 Best of Show Awards program, with an award logo indicating a winning product. The guide is an excellent sampler of new technology at the convention, and allows companies to tell you in their own words why they believe a certain product is noteworthy. A new category for 2017 is the Booth Design award; we showcase companies recognized for exhibit design and booth features that benefitted attendees and exhibitors.

Eight NewBay publications participate in the Best of Show Awards at NAB: TV Technology, Digital Video, Video Edge, Radio magazine, Radio World, Pro Sound News, Sound & Video Contractor and Government Video. Exhibitors may nominate

multiple products; they pay a fee for each entry. Winners are selected by panels of professional users and editors based on descriptions provided via a nomination form as well as on judges’ inspection at the convention.

Thanks for reading, and we’ll see you in spring 2018!



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ACCELERATED MEDIA TECHNOLOGIES INC.

ENGenesis for Video Field Communications

Allows TV Stations to Bring Studio Control and Operations Into the Field

Accelerated Media Technologies (AMT) Inc. introduces ENGenesis™, a bidirectional 2/7 GHz BAS band communications solution based on industry standard Long Term Evolution (LTE) technology.

ENGenesis incorporates innovative IP architecture to enable high-bandwidth IP bidirectional connectivity of A/V streams, VoIP and internet traffic with up to 50-percent greater sensitivity even at low levels in areas with obstructions such as heavy tree coverage.

ENGenesis received FCC Part 74-type acceptance in 2016 after extensive field trials and deployments providing documented proof of performance. ENGenesis is the *only* bidirectional newsgathering solution fully granted and licensed by the FCC.

AMT's ENGenesis 2/7 GHz BAS band communications solution utilizes a single high-capacity radio channel to support simultaneous bidirectional IP-based video/audio/data communications, thus providing broadcast stations with high-capacity private networks. The unique bidirectional communications solution enables full remote control of IP devices in the field from a centralized studio. ENGenesis' innovative LTE Dynamic Bandwidth Allocation also provides improved support for multiple field units with myriad performance benefits while eliminating cellular airtime costs.

With greater than 36 dB front-end gain versus conventional DVB-T systems (a 50-percent increase in sensitivity), ENGenesis delivers superior image quality with a transmission range of up to 80 kilometers using simple, small-footprint antennas that do not require elevating masts on vehicles or directional antenna adjustments on towers or buildings. Exceptional Quality of Service (QoS) allows broadcasters to set user and application data priorities to control traffic by field unit, by application within a field unit or both.



www.LTE4ENG.com

ACCELERATED MEDIA TECHNOLOGIES INC.

Nissan/Ford High Top Conversion

Beginning in 2016, a new generation of work vans emerged on the market replacing the aging Ford Econoline Series. These vans from both Ford and Nissan offered packages slated toward tradesmen but were not well-suited for use as broadcast vehicles. Our clients began to complain that the new vans were either too small (low headroom) or too tall once the payloads were loaded on the roofs. Also the OEM roofs had minimal capacity (+/- 300 pounds (roof payloads often exceed 1,000 pounds) between satellite systems and microwave systems and had drastic slopes making roof-mounted payload very difficult to service and mount.

To tackle this problem, in 2016, AMT worked with both Ford and Nissan to develop the industry's only certified, high-strength, custom High-Top conversion. The new conversion not only supports over 2,000 pounds, but also lowers the overall road height, lowers the center of gravity and increases roof strength by over 1,700 pounds.

It was designed to keep the vehicles well under 10 feet while offering superior interior work height. The modifications have been a game changer and allow clients to garage the vehicles and avoid overhead collisions as well as allow easy upgrade to technology.

AMT is the *only* manufacturer to offer this solution and it has been fully OEM-certified. More than 100 have been fielded and they account for nearly 70 percent of all vehicle conversions done.



acceleratedmt.com

ADDER TECHNOLOGY

Adder CCS-PRO8 Control Switch

Facilitating the Broadcast Control Room of the Future

With the introduction and adoption of IP-based technology, broadcast control rooms have continued to evolve and become more sophisticated. The transition from traditional SDI routers to IP-based switches and extenders has modernized the broadcast control room and enabled them to achieve greater workflow flexibility. Remote access, real-time control, points of redundancy and error-free transport streams have become a reality for AV professionals — an ultimate breakthrough in the broadcast industry.

Unfortunately, not all facilities have been able to keep up with this rapidly evolving industry, meaning high-tech hardware is often paired with older, less-advanced legacy hardware. This has led to delays, lack of operational control/access and system malfunctions, which is why it is important to keep control room equipment up-to-date and compatible. Although this can be an expensive and time-consuming endeavor, Adder Technology's suite of products, including the AdderLink XDIP and AdderLink Infinity matrix, helps to bridge the gap between those incompatibilities, creating an enhanced user experience with their IP-based, high-performance KVM technology.

Adder's latest addition to their product suite is the Adder CCS-PRO8 control switch. The CCS-PRO8 allows operators to control up to eight ma-

chines across eight displays using just one mouse and keyboard. This provides improved ergonomics for the user and their workstation, which can help reduce risk of error and improve efficiency. Seamless FreeFlow connectivity means that you can move the mouse across screen borders to select the desired computer. USB3.0 provides SuperSpeed USB that can be switched and shared between computers, while audio mixing allows the operator to choose individual audio levels from each connected computer. Additionally, the "Keep Alive" function means that connected computers can be set to stay "awake," enabling any connected computer system to be instantly accessible at a moment's notice.

Adder's forward-thinking business strategy and ability to stay ahead of the curve has solidified their position as industry leaders in the IP-based KVM space. The company's solid reputation, reliable services and expertise set them apart from their competitors, making their suite of solutions stand out amongst the rest.



www.adder.com/products/adder-ccs-pro8

AJT SYSTEMS INC.

LiveBook GFX LE Sports Graphics System

The Most High-End, Portable and Cost-Effective Sports Graphics Solution

AJT Systems unveiled the new LiveBook GFX LE at the 2017 NAB Show, with prices starting as low as \$4999! This new offering is sure to disrupt the market, as it is the most feature rich, high-end solution available at this price point. The LiveBook GFX LE works exclusively over NewTek's NDI IP video with top-of-the-line full motion graphics capabilities, and the ability to access our new online AJT Graphics Library, which contains ready-for-air graphics (unpack and on air in the same day!) pre-approved for network broadcasts on OTT networks, college conferences and a growing array of Sports Leagues.

The LiveBook GFX LE system ships with access to download full-HD animated, rebrandable sports graphic templates from the new AJT Graphics Library, developed by our award-winning graphic designers.

These high-end stock templates mean clients can start broadcasting out of the box without having to create their own graphics packages. The system also has download access to our approved-for-air OTT graphics and network branding for broadcasts on networks such as ESPN3, American Sports Network, Time Warner Cable and American Digital Network. This makes the LiveBook GFX LE the *most* cost-effective way to broadcast high-end graphics packages such as those for ESPN3.

The LiveBook GFX LE has an astonishingly low price point — while still being flexible and feature-rich. The system works via NDI with the Tricaster, Wirecast or VMix switchers. It connects to scoreboard controllers to automatically feed clock, period and score data to your graphics. The system can also support automatic stats integration in basketball,

and allows users to go to air with insert graphics including lower thirds, watermarks and full screens. Other high-end features are available on this system at no cost such as roster imports that allow graphics to utilize player data — such as headshots and player information — with a click of a button, quickly and easily building compelling player graphics.

As with all of AJT Systems' graphics solutions, the LiveBook GFX LE supports everything from NTSC to 1080p, including European formats, and is unicode friendly, making it an ideal solution no matter where you are located on the globe! It also has a powerfully intuitive user interface, requiring very little operator training.

AJT Systems is proud to release this new low-cost graphics solution to the market. It is different than anything else on the market at this price point as it is the only low-cost solution using the same robust technology ESPN uses to power their scorebug graphics. The system comes fully covered with support technicians available seven days a week, and three years of complimentary accident coverage on the laptop. AJT has been in the industry for 20 years, offering clients a low-cost graphics option that they can trust, with the ability to go to air on OTT networks like ESPN3, American Digital Sports Network and others without having to pay extra to access the graphics for those broadcasters. It is truly a revolutionary product offering, especially at a time when there is a great hunger for online sports content on a variety of networks and mediums. This solution will enable our clients to go to air with high-quality graphics that tell the stories their fans want to hear, whether they are broadcasting a high school game on FaceBook Live or streaming their college broadcasts to an OTT channel.

LIVEBOOK GFX LE



ajtsystems.com

AKAMAI

Media Services Live TV Streaming System

Purpose-Built Solution for Delivering 24/7 Live and Linear Online Video

Akamai is bringing the consistency and reliability of broadcast television to the internet with the next generation of its Media Services Live system for delivering 24/7 live/linear online video. The capabilities are designed to support over-the-top (OTT) video service providers, broadcasters and telcos that are operating or launching full-time television channels online.

Media Services Live consists of four key components that operate in concert to support the same level of quality for linear video streaming that is expected of traditional broadcast television:

Broadcast-Quality Ingestion: The transfer of video from its origination point to the delivery network is a crucial step in linear streaming. Akamai has built a highly distributed ingestion network using the company's proven mapping technology to match encoders to the most optimal entry point, creating a system that can automatically route content to different entry points with no viewer impact if the connection is interrupted. Those capabilities are complemented with ingest acceleration, based on Akamai's Media Acceleration technology, to support throughput of higher bit rates and also mitigate and circumvent poor network connectivity.

Low Latency: Akamai is introducing 10-second latency as part of Media Services Live, addressing the need for online and broadcast content to play back for viewers near-simultaneously. Particularly important for broadcasters and live sports and news providers, the feature dramatically reduces what has traditionally been a 30-second-or-more delay between broadcast signals and online streams.

Self-Healing Network: Akamai has incorporated multiple layers of redundancy into Media Services Live in which content is replicated to multiple locations across the network. The design allows for immediate failover if performance is in any way degraded.

Monitoring & Reporting: Akamai's new Media Services Live includes near real-time reporting that affords customers critical insights into content and ingest performance. The capabilities replace the minutiae and time inherent to pouring over log files with at-a-glance visualizations of criti-



cal, stream-level metrics such as average bit-rate, latency, packet loss and error rate among others. Users can set custom thresholds for key metrics that activate alerts when exceeded.

Akamai designed Media Services Live from the ground up explicitly to span the chasm between live streaming and broadcast television. The solution is dedicated and optimized to support the unique and rigorous demands of delivering live and linear 24/7 channels online with features and performance capabilities that simply are not available from commodity storage and delivery services. As OTT operators and broadcasters build their online businesses and expand their programming, linear channels and the related viewing experience are playing key roles in the ability to differentiate services. Having a platform that is able to support the quality of experience necessary to attract and keep customers will be critical as broadcast TV continues its shift online.



www.akamai.com/us/en/products/media-delivery/media-services.jsp

ALTEROS

GTX Series UWB Wireless Microphone System

6.5 GHz System Gives Broadcasters the Freedom to Operate

As wireless operation becomes increasingly restricted, Alteros' GTX Series Ultra Wideband (UWB) Wireless Microphone System gives users the advanced technology they need to expertly navigate RF spectrum congestion and regulation, now and in the future. The system was developed and tested in conjunction with major broadcasters and other professionals, leading to a number of patented technologies and unique features that deliver the performance, usability, redundancy and reliability required in the most demanding broadcast environments.

The GTX Series operates via fully digital, 2 ns pulse technology at 6.5 GHz. This keeps the system free not only from the overcrowded (and shrinking) UHF and TV band spectrum, but from "spectrum management" requirements, as well; users don't have to bother with the often complicated and expensive licensing, coordination, STA or database registration requirements they will encounter with other wireless technologies. Likewise, the GTX Series doesn't require any expensive microphone or LMR cables. The system uses standard shielded Cat 5 cable to connect its GTX3224 control unit to its (up to 32) GTX32 transceiver points, which in turn communicate with the 24 channels from the system's GTX24 transmitters. No additional filters, combiners or distribution amplifiers are needed. Aside from the ease of setup and cost savings this design provides, it also saves space and creates essential redundancy, giving users 24 simultaneous channels in just 3U of rack space and the industry-first capacity for 32-way, fully redundant reception, communication and error-correction performance.

To ensure the highest-quality audio and sync throughout the entire

audio chain, the GTX3224 control unit includes a video sync input for black burst or word clock that works with the GTX system's patented clock sync method to synchronize directly with the house clock. The system also has a very precise internal clock to automatically take over and maintain performance should the external sync be lost.

Since IP infrastructures are quickly becoming the norm in broadcast environments and beyond, the GTX is equipped with MADI, fiber, Dante™ and AES67 digital outputs to ensure seamless integration with a facility's current and future infrastructure design. Using GTX channels also serves to unclutter a facility's intermodulation and coordination mix. There is no limit to the number of GTX systems that can be operated simultaneously throughout a facility, and there is no need to worry about coordination or interference issues between studios.

Loss of power is not an option in broadcast and other "live" environments. So the GTX3224 control unit is equipped with two entirely separate, fully redundant AC power supplies to enable power grid redundancy. Alteros has also developed a special switching

mechanism that allows two GTX systems to be linked so that they can automatically back up one another should one of the systems experience a failure.

Among the additional features found in the GTX Series are <3 ms latency, uncompanied audio, a real-time battery gauge with a user-definable "alert level," an easy-to-use touchscreen GUI, a 31-day timestamped performance log for every device connected to the system, and an available microphone with an in-line talk-back switch.



APANTAC

OG-Mi-9 Input Multiviewer for openGear

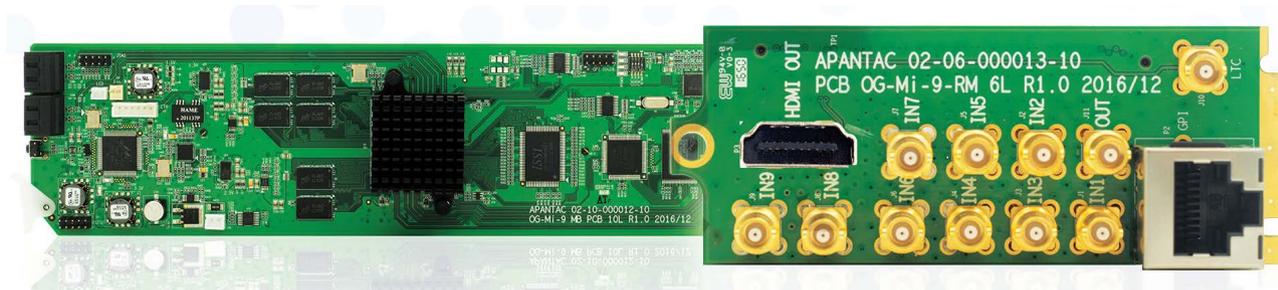
Expands to a 16-Input Multiviewer Card

The OG-Mi-9 is a nine input multiviewer card designed for the openGear frame and Dashboard software. A seven-input companion upgrade card is available to expand the nine input OG-Mi-9# model into a 16-input, two-output multiviewer. At its base price of \$1,095, it is the most advanced and affordable multiviewer card available. For users who are not ready to invest in a full openGear frame, Apantac is offering a standalone case for the card. It is perfectly suited for the mobile production trucks and rental and staging companies.

Key features that are important to users include:

- It has both HDMI as well as SDI outputs.
- Even though there are only nine physical inputs, it is capable of displaying up to 16 windows on a single display.
- Each input can be duplicated and resized on the display providing visual monitoring flexibility for the user.

- The windows can be freely sized and placed providing the user with layout freedom.
- Supports both GPI and serial tally to indicate the status of video signals.
- Advanced on-screen graphic display tools such as: UMD, OMD, audio meters, standalone labels, analog and digital clocks, counters/count-down timers provide a fully featured multiviewer monitoring solution for the user.
- The OG-Mi-9 can also become a standalone multiviewer with its own standalone frame and power supply. Some users are not ready to invest in an entire openGear platform, making this standalone version an ideal and affordable option.
- The OG-Mi-9 can also be expanded to become OG-Mi-16 (i.e. from nine inputs to 16 inputs). A user will purchase a seven-input companion card to do this.



ARVATO SYSTEMS

VPMS MediaPortal

Search, Find, Collect and Share Your Assets Across the Media Enterprise

Today's journalists must process several sources in order to create a story. In most cases, they need to search in external and internal systems for different types of content. For each source they will need to use different tools with different search algorithms, different vocabulary and different taxonomy. Producers, archivists and other users face the same situation and this makes the process of researching, assembling and publishing content less efficient, highly time-consuming and often frustrating. MediaPortal answers this problem by providing a central hub, not only for access to diverse sources including newsfeeds, social media, internal and external archives and MAM systems, but also to collect and process this content within one intuitive application.

Development & Deployment: MediaPortal uses agile development methodology. After the basic installation a new and upgraded version is available at the end of every two-week phase. Since the development of MediaPortal is conducted in partnership with end users, this release cycle has enabled a highly effective feedback loop with sample user groups. This has not only ensured rapid improvement in the product but an increased sense of involvement and ownership, significantly accelerating the rate at which users have adopted the new interface.

Future-Proof Design: Work environments are constantly changing and so are the skills of the workforce. With this in mind a new approach was needed in the design of MediaPortal. Going beyond the traditional "use case" method of product definition, a set of "Persona" was created, representing not just the "technical" requirements of different users, but the personality, temperament and current/future key skill competencies of "typical" users from each job function or role. The result is that each requirement can be discussed in the context of characters who, although fictional, become tangible reference points to ensure an intuitive and effective user experience.

Interface: Search is easy when you know what you're exactly looking for — less so when you're looking for something less specific but with a certain attributes. MediaPortal employs the same search techniques as popular online marketplaces to find media of all types across the enter-

prise. This approach makes MediaPortal unique. Similarly, MediaPortal is built on standard technologies to provide a secure, responsive web interface that can be accessed from any device meaning that content can be accessed anywhere within and without the facility.

Users can even "subscribe" to a search such that they receive notifications for new results matching their search terms rather than having to manually "pull" or "refresh" the search. Frequent searches can also be kept in the interface using saved "tabs." Found media or parts of it can be added to "Collections" — similar to a "cart" in online shopping, but used



to trigger multiple workflows. Folders can be shared with other users either within the interface or, expressed as a unique web address, by any email or chat application; sent to collaborative editing platforms; sent to a transcode, QC or WAN-transfer application; treated as an EDL and conformed to a consolidated clip; sent to playout, archive or other areas of the facility.

Architecture: MediaPortal utilizes standardized technology and interfaces. Adding new data sources is a simple matter of developing a lightweight "connector" and functionality can be easily extended using the "plugin" interface.

The effect of this architectural approach is that accommodating third-party systems can be achieved without fuss, and organizations can quickly tailor and configure MediaPortal for both new and legacy environments.

IT.arvato.com/broadcast

ASPERA, AN IBM CO.

Aspera Files SaaS

A Multi-Cloud SaaS Platform for Media Collaboration, Transfer and Streaming

Aspera Files is a breakthrough SaaS platform for high-speed media collaboration including large file transfer, sharing and now live streaming from any public cloud or on-premise storage. Fully managed by Aspera, Files allows organizations to instantly onboard and start sharing media from any environment via a “single pane.”

Files uses Aspera’s FASP® technology to overcome the fundamental size, speed and distance limitations of traditional transfer and streaming technologies. FASP provides distance independent transfer speed (regardless of network round-trip delay and packet loss), and predictable live streaming over commodity internet WANs.

Transfers are direct with all public and private cloud object storage, and have no content size limits.

As a result, Files offers breakthrough capabilities for distributed media management:

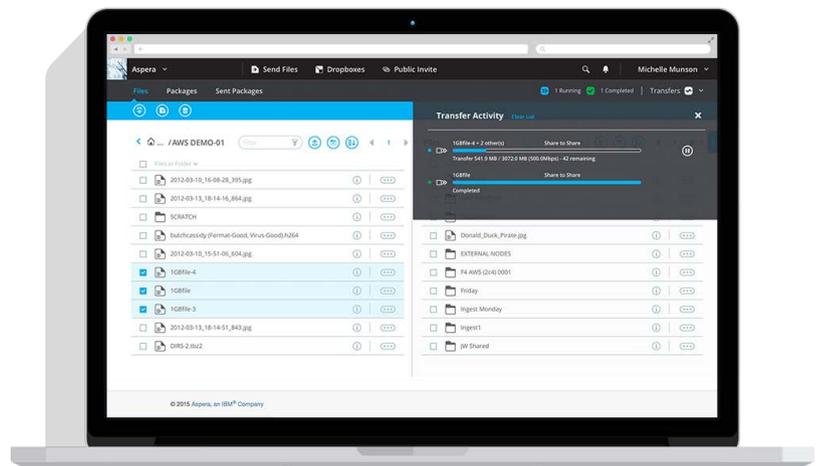
- No Size Limits — Move any size or number of files and data sets
- Maximum Speed — Send reliably at maximum available bandwidth over global WANs and ingest live video without glitches or delays
- Support for Any Storage — Open to any infrastructure combination of on-premises and in the cloud for direct access and high-speed transfer
- Powerful Security — Comprehensive built-in security including fine-grained user access control, collaboration settings and encryption on the wire and at rest
- Automatically Scales — Built-in elastic scaling supports variable transfer throughput and storage
- Instantly Available — New organizations onboard instantly with private, branded project-based sharing

First launched in 2016, Files now introduces dramatic expansion through a new Streaming Service option, and the following new capabilities:

- Files Streaming Service allows Aspera nodes to ingest live video streams through Files and distribute streams to browser clients via a lightweight plugin. Based on the FASPstream technology, which transmits live broadcast-quality video over internet without glitches, the new architecture can transport any HTTP/TCP or UDP video stream between media sources and clients with high quality and without modifying the media workflow.
- New Aspera Drive and Mobile Apps for iOS/Android extend collaboration possibilities for desktop and mobile users. Aspera Drive provides in-desktop Files access for remote transfer, sync and package exchange on Windows and OS X. New Check-in/Check-out options allow users to download a local copy of files to make changes exclu-

sively and check-in to replace the master version. New remote Share-to-Share transfers allow users to move content between global storage in the desktop, and a new OS X finder mount seamlessly opens remote files and saves local files for check-in to the infrastructure.

- New Files Express Mode is an ultra simple interface for sending and requesting large files and folders, activated with a simple toggle from full Files mode. Users can drag and drop to send packages with per-package expiration and encryption, and invite others to send to them with one-click personalized invitations. A convenient retractable side bar allows



users to preview incoming packages and download contents, forward previously sent packages, and review, modify and resend invitations.

- Seamless integration with the new Aspera Transfer Service, a hosted, multi-cloud transfer service that enables secure high-speed transfer of large files and data sets across cloud infrastructure. Customers can instantly add ATS subscriptions directly to their Files organization to securely share their cloud storage on AWS, IBM Cloud, Azure and Google Cloud (coming soon).
- New Subscription options with pure pay-as-you-go and volume commitment options ideal for the smallest startup or the largest enterprise.
- Self-service Trial and Purchase available directly from the Aspera Online Store.
- Many features enhancements (more than 30) around Collaboration, Security, Storage and Transfer Management, File Management and User and Workspace Management.

ASPERA, AN IBM CO.

Aspera Transfer Service

Multi-Cloud Multi-Tenant Service for Transferring and Streaming Information

Aspera Transfer Service (ATS) is a hosted multi-tenant software service running in the cloud that enables high-speed upload and download of large files and data sets directly into cloud object storage. Using the patented Aspera FASP® high-speed transfer protocol, customers can quickly and predictably move data of any size over any distance at line speed.

Aspera has wrapped its reliable, secure, ultra-fast transfer software into a service that is hosted and managed by Aspera’s team of experts in a high-availability environment. Subscribers to the service benefit from Aspera’s direct-to-cloud transfer technology that writes data directly to object storage during the transfer so that the information is immediately available upon completion of the transmission. ATS transfers are protected by enterprise-grade security, which authenticates and authorizes transfer clients. All data is sent over an encrypted wire and the files are encrypted when at rest. The platform performs data integrity verification for each transmitted block, and will automatically retry from point of interruption on failure. Its management interfaces provide precise control over the transfer network, allowing users to pause, resume and report upon transmission operations.

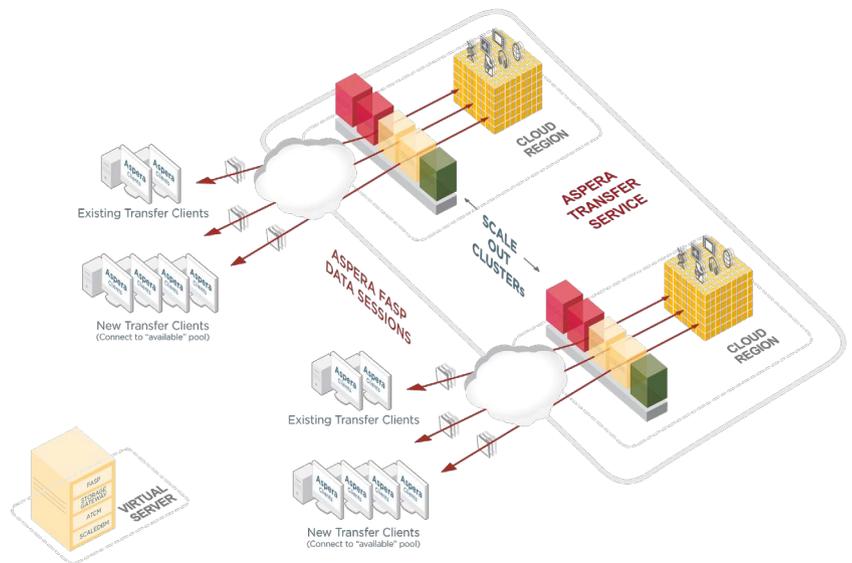
By subscribing to ATS, customers can gain access to their cloud storage in a matter of minutes. The product provides out-of-the-box support for all AWS and IBM Bluemix infrastructure regions and data centers. Early access is available for Azure and support for Google Cloud Storage is coming soon. The Aspera technology platform also ties in directly to advanced cloud storage features such as S3, IBM Cloud Object Storage, Infrequent Access, Reduced Redundancy, KMS (Server side key) and Cool Storage.

ATS is ideal for high-speed, large-volume, secure content ingest directly to and from cloud storage. Using Aspera products or an Aspera API, users can transfer and synchronize files at maximum speed directly to scale-out cloud object storage. Unlike TCP-based transfers, Aspera performance is independent of network round-trip delay and packet loss. Data can be transmitted 10 to 100 times faster, limited only by the platform I/O. Adaptive bandwidth control automatically adjusts the transmission speed to match available network bandwidth and available I/O throughput, ensuring transfer speeds are highly predictable and scale linearly with increases in bandwidth.

Seamlessly scaling, without any action required by the customer, the service can support many thousands of concurrent sessions running in parallel. This functionality speeds the transfer of directories containing

very large numbers of very small files, as well as transfers of extremely large files and directories.

ATS fits into any deployment environment (on premise, cloud, hybrid). Customers can gain instant access to cloud storage by leveraging the service’s interoperability with core Aspera products. The service supports all modes of data transfer (command line, interactive GUI point-and-click, browser, APIs, hot folder automation, one-way sync and bidirectional sync), and can be managed from the Aspera Files, Shares and Faspex web applications, whether they are hosted on premises or in the cloud.



Customers choose between two payment models when subscribing to the Aspera Transfer Service. The pay-as-you-go option charges for the data transferred during the month. An annual pre-commit subscription offers discounted rates on transfers that can scale up to multiple petabytes per year.

- ATS solves a wide variety of cloud storage challenges:
- Rapidly migrate very large files and data sets to, from and across clouds
 - Connect Aspera Files and Aspera applications to existing cloud storage with scale out transfer capacity and high availability
 - Embed ATS into existing cloud applications for fast, easy, high speed transfer and management of cloud data.

asperasoft.com/cloud/aspera-transfer-service/

AUDIO-TECHNICA

6000 Series High Density Wireless System

Spectrum-Efficient System Provides 31 Simultaneous Channels at 944–952 MHz

Audio-Technica's 6000 Series High Density Wireless System is designed to give broadcasters the freedom to operate within an increasingly congested radio frequency spectrum. The 2016 FCC Incentive Auction will result in a repacking of the broadcast spectrum that will almost certainly reduce the amount of spectrum available to wireless microphone users, thus driving the need for spectrum-efficient technology that enables the operation of a high number of simultaneous channels — technology like that found in the 6000 Series.

The 6000 Series operates in the 944–952 MHz band, keeping it free from broadcast TV interference. Just as important, the system spaces its channels at 125 kHz intervals, allowing broadcasters to utilize up to 31 simultaneous channels within 4 MHz of bandwidth. Other systems that operate in this portion of the spectrum typically require 250 kHz of space between channels, resulting in an available channel count that is considerably less than that offered by the 6000 Series.

With its full-rack metal chassis, including reinforced mounting ears and rear rackmount capability, the system's ATW-R6200 S receiver installs quickly and securely, providing two channels per rack space. The receiver's clear, easy-to-read displays and front-panel controls make it simple to configure the system and monitor frequency, RF and AF levels, transmitter battery level, mute status and more. The system also features IR Sync functionality, which greatly streamlines the process of configuring transmitters. Users can set a transmitter's RF power output, mic gain and battery type (alkaline or Ni-MH) — and lock the settings, if desired, to prevent inadvertent changes — on the receiver and then communicate those settings to the transmitter simply by positioning the transmitter close to the receiver while pressing the transmitter's IR Sync button.

The body of the compact ATW-T6001 S transmitter features rugged metal construction and an ergonomic design. It is equipped with a newly designed miniature input connector that works with a variety of Audio-Technica lavalier and headworn microphones. A flexible, wavelength whip antenna gives the transmitter a broad operating range.

Audio-Technica also offers Wireless System Monitor software that enables PC monitoring of all of the receivers in a 6000 Series system. Once the receivers and PC are connected via standard Ethernet cables to a hub or router with a DHCP server, the user can quickly configure the software for Windows-based monitoring.



AUDIOVIDEO BRANDBUILDER CORP.

IS-Mini X Wowow's Digital LUT Box

Fastest Processing Time, Higher Image Quality, Lowest Latency Than Others

The IS-miniX is the ULTIMATE LUT device for the color management of 3G/HD SDI video signals. Based on FujiFilm's technology, the IS-miniX provides the best image processing available in the market and the lowest output signal delay, making this device ideal for production and live broadcasting.

Frame Capture is one of the key functionalities of the IS-miniX. Operators can save and load images on to its 4 Gbits DRAM to capture one single frame, output a saved frame instead of an input signal, display a composite saved image with a live image using chroma key, or overlay a live image with a logo or animated characters.



Frame Markers, such as center cross and three different sets of frames, have been added for on-site viewing. The IS-miniX can show multiple frames in different sizes, aspect ratios, widths, and colors, to confirm different output targets.

The IS-miniX operates with the new WonderLook Pro software, capable of additional functionalities on its own, but in the future, the IS-miniX will work with different imaging software as SDKs are being developed for third parties.

Main Uses of the IS-miniX LUT Box:

On-site Preview and Grading: Several of the new functionalities of the IS-miniX allow for on-site previewing and grading. The IS-miniX outputs very high quality and precise images in real time allowing to manage exposure and lighting settings on the fly. In addition, using the new frame markers functionality helps to identify and confirm the framing of the image very quickly. And now DITs have a powerful method to create LOOK's on-set thanks to the quick LUT update response or by using a still image instead of live input from the frame capture capability.

Multiple Camera Live Production: The IS-miniX is best for live or multiple-camera productions. By feeding camera-specific LUTs to each IS-miniX, they can eliminate the difference of tones and colors on such cameras. Even for cameras without color control capabilities, the IS-miniX can capture the original image and feed the color difference so the color balance of the camera can be compensated.

HDR/SDR Conversion: Any camera LOG or color space can be converted to any color space of monitors, including existing Rec709, DCI-P3, or recently standardized HDR specs such as ST-2084 or HLG1.2. The IS-miniX enables HDR/SDR simultaneous conversions in live productions — inserting SDR contents into HDR productions, or broadcasting HDR contents in SDR programs. Also, using the signal generation function, the IS-miniX can be used for monitor calibration and to allow consumer TV sets to be used as HDR mastering monitors.

Key Differences of the IS-miniX LUT Box:

Superior Image Quality: The 3DLUT interpolation algorithm provides a far better image quality than the competitors, which can be easily observed on a gradation scene with ACES rendering.

Lowest Delay and Higher Stability: The IS-miniX is very stable and has low latency making it ideal for live broadcasting with switchers and capable to operate 24/7 without interruptions.

Quick Response: The 3DLUT Update speed is the fastest in the market, providing a quick turnaround for live grading.

SPECIFICATIONS:

- Signal Inputs: 3G-SDI, HD-SDI – 10 bits
- Signal Outputs: 3G-SDI, HD-SDI – 10 bits, HDMI 8 bits
- Communication Interface: USB2.0 LAN (100 Mbps) — used for LUTs, Frame Image, Ancillary Input/Output
- Running Mode: Standard Input/Output, Color Patch Creation (59.94i), Frame Image Output, Chroma Key Composite, Animation Overlay
- Rec Flag: UDP Broadcasting Messaging
- LUT Processing: 1D (1024-step) + 3D (26x26x26) + 1D (1024-step)
- Simple OSD: 256x64 Single Color
- Frame Lines: Three Frame Sets and Center Cross
- Delay: Less than 3µsec

AUDIOVIDEO BRANDBUILDER CORP.

WonderLook Pro Color Management Software

This Software Can Recognize Up to 60 Different Camera Profiles

WonderLook Pro (WLP) is the newly developed and best color management software solution for your entire project. Based on FujiFilm’s technology, the WLP was created to help DITs and colorists to resolve any issue in color creation and color management. The WLP has two major functions:

Control of Different LUT Boxes

The WonderLook Pro software can control all of the functions of WOWOW’s IS-mini and IS-miniX LUT boxes. 3D-LUTs are created and applied onto these devices in less than 150ms through the GUI. Also, the WLP can control the IS-miniX’s new functions, such as capturing frames, sending and outputting still images, analyzing ancillary information and displaying frame markers. Chroma-keying and animated characters or logo insertion will be supported in the near future. In addition, the WLP also supports other LUT devices available in the market, such as Teradek’s COLR and FSI’s BoxIO boxes.

Another important characteristic of the WonderLook Pro is to allow the control of any number of LUT boxes at the same time. The operator may group LUT boxes with the same setting for the same type of cameras or by using four of them to control one 4K camera. Or the operator could use the WLP’s LOOK SYNC function, which allows it to apply the same LOOK parameters onto LUT boxes with different settings.

Creation of LUTs

The WonderLook Pro software was designed based on the ACES concept and therefore it may be set as an ACES-compliant workflow component. WLP includes LUTs for more than 60 types of camera profiles called Input Device Transforms (IDT). All of these transforms are made by the

measurement of actual camera units with WOWOW proprietary equipment and software.

WLP also provides a simple but powerful method to create LOOKs, not only by using its GUI, but also from tangent panels. When using an IS-miniX LUT box, LOOKs created with the WLP software are saved with still images and ancillary data. Then they can be exported as LUTs including various settings, still images and metadata. Many types of LUT formats are supported and both, before and after, rendered images are provided to assist in the creation of the color pipeline on the grading software.

The WLP supports different color spaces, including HDR specifications — both ST.2084 and HLG1.2. Some of the support WLP provides are waveform representations, specs warnings, HDR to SDR mapping, SDR to HDR conversion, HDR rendering and HDR/SDR simultaneous color correction.

Some of the key differences of the WonderLook Pro color management software with the competition are:

- 1) WLP transforms are color managed. It’s independent from the type of camera and it can easily convert to different color spaces, including Rec709, DCI-P3 and HDR.
- 2) The WLP can recognize up to 60 different types of camera profiles.
- 3) The WLP can create a wide variety of rendering: RRT, print film emulation, negative film looks.
- 4) Multiple LUT box control at the same time: This can be done by grouping LUT boxes with the same setting or by using the LOOK SYNC function for LUT boxes with different settings.

There are three types of licenses that allow the use of the WonderLook Pro color management software: Entry, Standard and Corporate. The difference among these three types of licenses is basically the number of LUT boxes the software would be able to recognize. The WonderLook Pro is manufactured by WOWOW Entertainment and distributed in the Americas by AudioVideo BrandBuilder Corp.



www.avbbcorp.com/product/wonderlookpro

AVID

Avid NEXIS

Delivers the First Software-Defined Storage Platform for Media

Designed to help major broadcasters, post-production workgroups and other creative teams conquer the mission-critical production demands they face daily, Avid NEXIS delivers unmatched performance, scalability and flexibility in the world's first and only software-defined storage platform for media. Powered by the MediaCentral™ Platform, the industry's most open, tightly integrated and efficient platform designed for media, Avid NEXIS enables teams to collaborate, accelerate production, increase efficiency, adapt quickly to changes, scale capacity and bandwidth and protect their media — no matter which creative tools they use. Whether a small production team or a large media enterprise, NEXIS is the only storage platform built with the flexibility to grow with customers at every stage of their business.

The latest version of software, Avid NEXIS and NEXIS | PRO systems provide the fastest, most reliable workflows for professional post-production and broadcast environments, as well as new collaborative workflows for professional audio production. For post-production and broadcast users, NEXIS delivers several new features, including 50 percent more productivity with new high-performance storage groups that deliver up to 600 MBps bandwidth speed per Media Pack (up from 400 MBps). For smaller post-production teams, Avid NEXIS | PRO provides the industry's best and broadest collaborative capabilities for both Avid and third-party creative applications, while delivering real-time 4K performance at up to 2.4 GBps. Larger post and broadcast users can mix and match a combination of NEXIS | E5, E4 and/or E2 engines providing up to 28 GBps of bandwidth with new high-performance storage groups.

No matter the size of the facility, users get the media performance speed they need to handle higher volume 4K/UHD and HD workflows,

as well as bandwidth-intensive workflows for finishing. Users can play back over 215 streams of DNxHR-encoded 4K media at high quality, or almost 1,400 streams of DNxHR-encoded 4K media at standard quality.

For professional audio production, Avid Nexis now makes it easy for Pro Tools creative teams to connect into the industry's most efficient media production environment and access shared projects, maximizing the speed of content delivery.



In addition to its extensive and scalable video post and broadcast workflows, Avid NEXIS can also be used across multiple audio-only and combined audio/video workflows — specifically for small- to mid-sized audio post production and small broadcast.

As a fully open storage platform, Avid NEXIS gives video and broadcast professionals the performance, flexibility and efficiency of the industry's most powerful storage solution, regardless of the editing application they choose to use. In addition to Avid Media Composer and Pro Tools, Avid NEXIS works with media creation applications from other leading vendors, including Apple Final Cut Pro, Adobe Premiere Pro, Grass Valley EDIUS and many others. By working seamlessly with both Avid and third-party creative tools and asset management systems, Avid NEXIS allows for the acceleration of production by real-time collaboration across creative teams.

www.avid.com/en/products/avid-nexis

AXON DIGITAL DESIGN

Studio.One Ultra High-Res Camera System

Multi-Angle and Live 360 Video Production in One System

Studio.One is a brand-new innovative camera system for multi-angle and live 360 video production. Developed by a team of academics in Europe in partnership with established international broadcasters and manufacturers, Studio.One employs cost-effective, ultra-high resolution cameras with wide-angle and/or fish eye lenses to capture every aspect of a live event from multiple angles. The system is designed to integrate into a traditional or IP broadcast environment and blend seamlessly with virtual reality video production, making it ideal for remote internet or broadcast live productions such as music concerts, sports events, church services and conferences.

Studio.One essentially consists of three tightly integrated components: camera, capture server and processing software. The server ingests the raw, wide-angle video data from the cameras and allows recording and live processing of this data into one or more rectilinear views and a view mosaic. Although framing can be conducted live, a key advantage of this system is that framing can be carried out offline at the viewing or post-production stage. Using software-based pan-tilt-zoom “virtual camera” cut-outs, a single operator can capture perfect shots from multiple vantage points — something that would normally require the skills of a small army of cameramen. This makes it the perfect solution for a range of events including live regional and college sports, where it can capture an entire game with a crew of only one or two members, using three or four static wide-angle high-res cameras. Simply adding a camera with a zoom lens on a pan-tilt unit for close-up views will provide more immersive action shots.

By generating multiple “virtual” cameras from a single physical camera and by using wide angle lenses that ensure every aspect of a live event is captured, Studio.One gives program makers endless creative possibilities when it comes to deciding how they want their program to look. The cameras are very small and

unobtrusive, which means they can be used in places where you wouldn't normally put a camera. It's also possible to automate the system using pre-programmed camera motions or motion tracking, while our server allows cameras to be shuttered precisely and simultaneously and frames to be time stamped with an SMPTE LTC or other timecode.



The demand for technology that gives program makers, especially those on tight budgets, the ability to efficiently capture and stream broadcast quality content is growing and Studio.One satisfies this demand by combining camera and IT hardware and software in a highly sophisticated and cost-effective way.



BANNISTER LAKE

Chameleon: Branding, Ticker & Signage

Your One Solution for Bridging Data and Graphics for Any Output Format

Bannister Lake Chameleon, an adaptable media graphics solution, contains the best of our branding and ticker elements that production and media organizations expect in a growing “on-demand” broadcast environment. Chameleon is a cloud, browser-based, data aggregation tool that supports any data feed available. From news, sports, weather, elections and more, customers organize data content and play it out in an automated schedule rundown. Chameleon also includes Branding modules, with support for an unlimited amount of channels. Unlike similar products, Chameleon comes bundled with every module, and has the ability to cross-promote between channels, dynamically importing traffic schedules of any type. Our data includes intelligent restful API distribution, making our software compatible with virtually any CG Broadcast Graphic System on the market. Chameleon has tight integration with Ross Xpression, but also supports SDI, NDI and HTML5 using its own rendering engine, a feature no other branding and ticker software provider supports. Chameleon also tightly integrates with Bannister Lake’s Community software, a cloud gateway

for localized data entry, geared towards municipalities, sports beer leagues, school districts, conventions, e-sports events, allowing institutions, hyper-local communities or event planners and attendees to enter information regarding events, closings, news and sports results. Chameleon has the ability to revolutionize the way customers can deliver their content, promote and sponsor it, and how said content can be watched by the viewer, everywhere. Hence its tagline: Chameleon — one source: everywhere.



www.bannisterlake.com/chameleon

BB&S LIGHTING

Pipeline 2' 2-Bank Remote Phosphor Light

Compact Remote Phosphor LED Lights Ideal for Small Studios

BB&S' new Pipeline 2' 2-Banks remote phosphor LED lights are so compact and lightweight with such powerful and controllable output that they are being grabbed up for use by broadcast studios, remote production and cine work alike — since deliveries began this season.

Small Broadcast Studio Space Saver

When studio space is small, with low ceilings that often don't come with a large power drop, there's a lighting challenge. They require small form-factor lights that provide high light output, low power draw, with high TLCI 98 accurate color quality. BB&S rides to the rescue with the Pipeline 2' 2-Bank remote phosphor fixtures, available in 3200°K, 4300°K and 5600°K versions.

The compactly-designed 2' 2-Bank fixture weighs 3 pounds and is 24 inches L x 4 inches high x 1.5 inches deep. It comes with a removable honeycomb grid and diffuser. In studio it can be mounted flush against a wall or ceiling, or hung with multiple optional hardware accessories. In the field it travels lightly as a single unit, in a small case.

Better Color Over Time

Where traditional LED fixtures may offer a partial solution for the studio, they are limited in providing highly accurate color rendering. And while their phosphor layer is applied directly onto the heat generating LEDs (that degrade over time), BB&S uses remote phosphor technology, which separates the LEDs from the color generating phosphor coating, enabling more vivid color generation, TLCI as high as 98, and less color degradation over the long term.

2' 2-Banks Rugged, High TLCI and Infinitely Dimmable

BB&S' Pipeline fixtures, are ruggedly made in a 1-inch cylindrical form that emits light around 180 degrees. They provide upwards of 98 TLCI color accuracy, and are infinitely dimmable with no color shift or flicker. With an

aluminum back channel, Pipeline fixtures are practically indestructible. Plus they are smoothly dimmable throughout the range.

Low Power Draw, High Light Output

Each 2' 2-Bank fixture draws a paltry 40W at the 100% end of its dimming range, outputting a maximum of 4000 lumens. This allows up to a dozen of the 2-Banks to be plugged into the same 15W wall outlet. For field production assignments, commonly available professional 14.4V camera battery packs can also be utilized, with the optional driver dimmer pack, to eliminate the need for AC power outlets.



Control Options

The 2' 2-Banks are part of BB&S' Raw series of lights, which means they do not come with their own driver dimmers. A short cable with a 3-pin XLR connector on the 2' 2-Bank allows a single optional controller or BB&S' convenient 48V 4-way Controller with DMX to control up to four of the banks. This 48V solution provides smooth dimming all the way to zero. And there is no flicker at any framerate. Optional extension cables 8', 16' and 24' can be used, with no power loss. (Alternatively, users can supply their own LED driver/dimmers with optional DMX packages.)

From Small Broadcast Studios to Run and Gun

With its small footprint, low power draw, high light output at 98 TLCI or better, and full dimming, the BB&S 2' 2-Bank remote phosphor lighting instruments are made to order for small studios, remote broadcast and ENG.



www.bbslighting.com/products/pipeline-2-2-bank-remote-phosphor-led

BEXEL

Bexel Clarity 800 Live POV Camera

POV-Sized Camera Sets New Technology Standard for Capturing HFR Images

High-speed cameras have become the “next big thing” for adding production value to live TV shows. The replay from a good high-speed camera brings an exciting new dimension to a production that isn’t lost on consumers. Those high-speed shots from Sunday’s broadcast game are what people talk about around the water cooler on Monday.

There are many high-speed cameras on the market, but the choices are limited when it comes to specialty or POV type cameras. Bexel’s own experiences supporting customers’ demanding production requirements — from the court to the ice — revealed there was a strong market demand for a small, POV-type high-speed camera with the same quality and functionality as a large camera. Bexel also identified sports and event producers’ increasing demand for high-quality, real-time HFR video, and a complete gap in the market for a POV camera with real-time processing optimized for live sports.

The result is Bexel’s Clarity 800, the world’s first miniature, high-frame-rate (HFR) point-of view camera for live production. The Clarity 800 is a true game-changer for live broadcasting, allowing for HFR to be easily used in any application. The camera easily integrates into a live event ecosystem, operating just as a larger broadcast camera system with real-time processing via fiber optics and integration with industry-standard video servers. Key features include a full-function camera remote control panel (RCP) for paint control of the camera and a positive-lock lens mount with lens control of

focus, iris and zoom motors.

The Clarity 800-HD offers HFR in 1080p HD up to 8x (480 fps), and the upcoming Clarity 800-4K will capture 4K (UHD) images at up to 2x (120 fps). Both models deliver complete camera functionality in a form factor not much larger than the footprint of a business card at only 4.7 inches high, 2.56 inches wide, and 1 inch thick. The camera uses a 4K 7mp Micro 4/3-inch CMOS imager and 1080p HD signal processing for remarkable images. The Clarity 800’s picture quality is outstanding

and the replays are very clear, critical for live sports. Handles on the video allow the camera to be painted to match the larger cameras on the production, and yet the camera can be mounted and placed in areas that have not previously been accessible for a high-frame-rate camera in the past; for instance, a basketball backboard.

The demand for high-frame-rate (HFR) HD video is continuing to expand, and broadcasters need to be ahead of viewer demand for the latest formats. As a longtime and successful provider to the broadcast industry, Bexel expects the HFR requirement for HD video to continue to grow. Therefore, the Clarity 800 is just the first in the company’s upcoming family of robust and affordable cameras that meet specific broadcast requirements. The Clarity 800 camera is available for rent exclusively through Bexel and Camera Corps, which has an expansive global footprint spanning the Americas and Europe. More information about the Clarity 800 and other Bexel products and services is available at claritycamera.com.



claritycamera.com

BITCENTRAL

Core News All In One News Production

The Core A-1, the Ideal System for Small-Scale News Production

The proven Core News solution from Bitcentral has been powering newscasts in an efficient manner, getting the most out of news teams to produce premium content with high relevance to communities across the country. Core News now can be applied to news-producing markets that desire a smaller footprint with smaller scale production with the All In One system, called “Core A-1.” With the growth of news consumption in 2017, this system addresses stations in the local news market with value pricing to achieve efficient workflows for smaller scale production. The system is expandable to the full Core News system as viewership and profitability increase.

Visitors who were able to see demonstrations of the workflow at the 2017 NAB Show were able to see the reason why so many stations rely on CORE:news, Oasis asset management, Precis playout, and Create ingest and editing and digital publishing across the country.



bitcentral.com/solutions/news-production

BITTREE PATCHBAYS

12G+ Mini-WECO Coaxial Video Patchbay

High-Performance, Single-Link Patching Simplifies Next-Gen Infrastructures

Delivering high-bandwidth performance for SD-SDI, HD-SDI, UHD-SDI, HDR, 4K and 8K single-link video applications, the new 12G+ Mini-WECO (Midsize) Coaxial Patchbay family extends Bittree's hallmarks of design excellence and trusted reliability to next-generation video infrastructures.

While adoption of 4K workflows in the broadcast and professional audio/visual industries continues to accelerate, the most common mechanism for transporting 4K content in production and distribution environments has been quad-link connectivity, comprising four coaxial cables for each 4K feed. The exceptional performance and precision of Bittree's 12G+ patching systems enables reliable handling of 4K over a single 12 Gbps link, dramatically simplifying cabling for studio, master control, A/V system and mobile production deployments while quadrupling the number of 4K channels that can be routed through each unit.

The higher bit rates and frequencies needed for transporting 4K and greater signals on a single link require greater attention to the cables, connectors and connectivity equipment in the chain. Bittree's 12G+ mini-WECO patchbays are engineered to deliver exceptional performance and exceed SMPTE specifications including SMPTE 292M, 424M, ST2081-1 and ST2082-1.

Offering 75-ohm impedance with low return loss and ringing out at 24 GHz, the future-friendly 12G+ patchbays support data rates up to 48 Gbps and provide a tremendous amount of clean headroom for not only 4K, but also 8K, HDR and higher bit-rate applications. To help further maximize signal integrity, Bittree can also supply high-quality, 12G+ rated connecting patch cables, terminators and looping plugs.

The new 12G+ mini-WECO patchbays are offered in five configurations to meet a flexible range of user connectivity and space requirements: 1x32 in 1RU of rack space; 2x32 in 1RU, 1.5RU or 2RU models; and 3x32 in a 3RU form factor. Designation strips enable easy labelling and identification. Distinctive, stylized green color-coding of the panels, patch cords, termination, and looping plugs easily conveys their 12G+ compatibility.



The panels and connectors are designed and built to exacting standards to withstand the demands of heavy-usage applications and rigors such as the vibration occurring in mobile production environments. Precision-machined phenolic insulators electrically and mechanically separate the jacks from the front panels. The units are constructed of 3/16-inch machined aluminum with a durable powder-coat finish and stylized front panel design.

Like all of Bittree's renowned audio, video and data patching systems, the 12G+ mini-WECO coaxial video patchbays leverage the company's 39 years of proven engineering expertise, and are designed, built and tested to rigid quality standards in Bittree's state-of-the-art facility in Glendale, Calif. The 12G+ patching systems are available immediately, and are backed by expert customer service from Bittree's dedicated sales engineers.



BLACK BOX

Boxilla AV & KVM Systems Manager

A Premier Enterprise-Level KVM & AV/IT System Management Platform

Boxilla is a premier enterprise-level KVM and AV/IT system management platform. It serves as a centralized command center with a dashboard giving an instant snapshot of the KVM network.

This includes what users and devices are active, and how much bandwidth different devices are using. It also provides real-time updates on how the system is performing at any given time. Drill-down menus let users dig deeper for more in-depth analysis.

Boxilla is designed for enterprise-level deployments with large-scale, mission-critical applications involving multiple end-points. In these environments, Boxilla's ability to streamline and automate the communications between KVM devices becomes highly valuable. Boxilla is redefining efficiency, simplicity and functionality in high-volume environments.

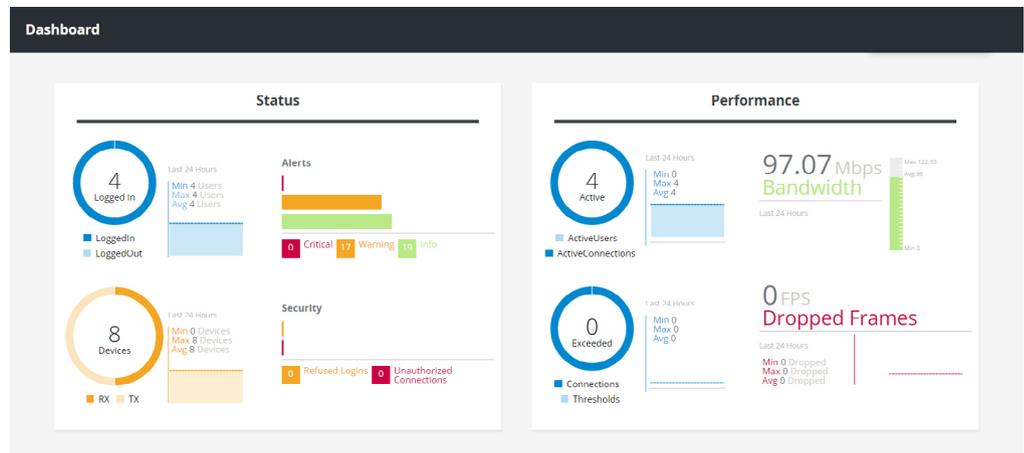
Boxilla's premier benefits include:

- **Centralized Configuration Management.** Centralized upgrading sends firmware updates over the network. In addition, the configuration of various devices can be centrally backed up and restored, eliminating the need for a technician to go to each device to upgrade firmware or restore the configuration.
- **Security.** It automates security management. Boxilla captures all the end points in the system and can detect if hackers are trying to break in. In addition, it quickly identifies refused login or unauthorized login attempts so users know if they are being targeted for hacking. It then correlates that information and gets it back to the administrator quickly and efficiently. If security is compromised, the right people will know it in real time, getting detailed information within about 90 seconds of the event.

- **Ease of Use.** Boxilla's comprehensive and centralized command center makes it far more straightforward to manage. It sends automated commands to network switches and provides a central dashboard for authentication, access control, accountability, troubleshooting and device monitoring. It allows

for the upgrading of thousands of remote devices with one click, without ever leaving your seat — let alone the building.

- **Performance Monitoring.** The easy-to-navigate, centralized manager monitors frame per second rate, network latency, dropped frames, bandwidth usage and user response times. It actively keeps logs of user connections reporting on who's connected to whom. It also enables device management by providing information on things such as an overloaded network switch, bandwidth usage or device status to address potential problems before they happen.



Integrated with the company's InvisaPC™ solution, Boxilla creates more unique capabilities. As a zero-client device, it provides KVM connectivity to virtual machines. Integrated with Boxilla, it is the only solution to scale virtualized high-performance KVM environments. It handles both IP-based KVM extension/switching and access to virtual servers. This matrix can scale to an unlimited number of devices. This integration provides the only solution to manage large-scale, real-time and high-bandwidth virtualized KVM solutions.

At the 2017 NAB Show, Black Box demonstrated Boxilla, and its integration with InvisaPC. In addition, Black Box demonstrated its next software integration release with the company's DKM solution for KVM switching that enables users of DKM systems to also connect to virtual machines through the DKM system with a single user interface.



www.blackbox.com/en-pr/store/Detail.aspx/Boxilla-Enterprise-Level-KVM-and-AV-IT-Manager/BXAMGR

BLACKMAGIC DESIGN

ATEM Television Studio Pro HD Switcher

All-in-One Live Production Switcher With Integrated Hardware Control Panel

ATEM Television Studio Pro HD (\$2,295) is a broadcast-quality all-in-one live production switcher with integrated hardware control panel designed for both broadcast and professional AV users. It features eight inputs (four SDI and four HDMI inputs, all with re-sync), multiview, auxiliary and program outputs, analog audio inputs, built-in talkback, two flash-based media players, creative transitions, a DVE for effects and more. It is compatible with all SD and HD formats up to 1080p60 and features two channels of analog audio in, RS-422, Ethernet, built-in IEC power supply, program and auxiliary outputs and both SDI and HDMI multiview outputs.

The hardware panel features large, illuminated buttons for switching between sources, corresponding audio buttons, one-touch transition buttons, downstream keyers, fade to black, media player, cut buttons and more. There's also a built-in LCD screen for previewing source and program video, a spin knob and additional buttons for menus and adjusting settings. Press the button for the source next in the program, hit the cut or auto button to switch sources and add effects or key in graphics.

A free software control panel for Mac and Windows allows multiple users to be connected at once. The software control panel features different pages for switching, managing media, mixing audio and remote controlling and color correcting cameras. The Switcher page is modeled after a physical hardware control panel, making it fast to switch between sources, adjust transitions, add upstream and downstream keyers and more. The Media page lets customers drag and drop up to 20 RGBA graphics into the media pool and automatically upload them to the switcher's flash memory for real-time use during a live program.

The software control features a 10 channel audio mixer for adjusting and balancing levels from all inputs, including analog audio inputs. The audio mixer displays meters, has sliders for adjusting levels and has controls for turning channels on or off, using the

audio follows video feature and more.

Transitions (mixes, wipes and dips) are done by pressing a button on the control panel. There are 37 transitions included, providing creative options and customization, such as border, border color and width, position, direction and more. There's a built-in 2D DVE for adding digital video effects that can position, resize and scale live video, all in real time. Users can create professional picture-in-picture effects, use DVE-



powered transitions, like squeeze and slide between sources, or create graphic wipe transitions with their own graphics.

A built-in media pool can store 20 graphics for use with two built-in media players. The media pool uses flash memory, so images are saved even after the power is turned off, meaning customers can create custom graphics for use in their own programs. There is an upstream keyer with full chroma keying for green screen shots for adding weather maps, graphics or even virtual sets. The upstream keyer works with chroma, patterns, shapes and linear keys. Two downstream keyers can add graphics, logos and bugs to video.

A built-in talkback converter for SDI cameras sends talkback information back to the camera via the SDI program return feed on the rarely used SDI audio channels 15 and 16. When working live with a reporter in the field, there can be a slight delay that causes them to hear themselves as an echo in their headset. The new mix minus feature sends back all the program audio except their own voice, so they don't hear a distracting echo of themselves while reporting.



www.blackmagicdesign.com/media/release/20170424-02

BROADCAST PIX

BPswitch Video Production Switchers

First Switchers Controlled Over IP From Anywhere by Tablets and Panels

Broadcast Pix™ introduces its new BPswitch™ family of integrated video production switchers, which feature the industry’s first control-over-IP from anywhere by tablets, phones and panels. Now, a corporate, government, school or religious live broadcast can be controlled from a control room, the audience, another city or even from home. Plus, broadcasters can control a remote unmanned studio affordably. The new switchers have enhanced BpNet™, hybrid SDI and IP I/O, streaming, NewBlueNTX graphics, optional robotic camera control, and are 4K-upgradeable.

BPswitch enables control from tablets, phones and laptops by using the Broadcast Pix Commander™ user interface, which now can run in a browser, including Chrome, Firefox and Opera. It can control a local BPswitch or a remote BPswitch over IP using BpNet. Commander lets non-technical personnel easily execute powerful live productions, including switching, adding titles, clips and effects and controlling robotic cameras. The interface can be customized for any application.

Broadcast Pix also announced that its BPview™ multi-view can now be used in a browser. Since Broadcast Pix control panels are already network-capable, putting BPview in a browser enables panels to easily control either local or remote BPswitch systems over IP. Remote control is a rapidly growing market because of the staffing and location flexibility it brings. However, other switchers require leasing a big network line for each remote camera to bring it back uncompressed to a local switcher, which is prohibitively expensive. In contrast, BPswitch enables the switcher to be located with the cameras and controlled remotely over IP using a typical internet connection, making remote control affordable. BPswitch can also control remote IP cameras, such as Sony and Panasonic robotic cameras.

“BPswitch allows our customers to create great live video from anywhere on any device,” explained Kevin Prince, CEO of Broadcast Pix. “We’ve effectively leap-frogged the industry by combining our patented networkable switcher technology with the cloud technology from our ioGates acquisition. I think it’s fair to call this disruptive technology, because it fundamentally changes our industry’s concept of a control room

by distributing it.”

BpNet, Broadcast Pix’s IP ecosystem, is enhanced to provide the new control-over-IP capabilities (patented) with ultra-low control latency. BpNet security prevents unauthorized users from controlling a switcher with extended encryption and two factor authentication. BpNet also provides ioGates™ cloud-based media management services, providing remote control of the switcher’s media, cloud storage, transcoding and delivery of content anywhere.



The new BPswitch models are the FX, MX and GX, which provide up to 22 SDI inputs and 12 outputs. All systems also provide IP inputs and streaming to Facebook Live and other CDNs, and are upgradeable to 4K. The built-in NewBlueNTX (NewBlue Titling Xperience) provides a motion graphics CG. Like previous Broadcast Pix switchers, BPswitch has up to eight internal channels for clips and graphics, customizable multi-view, file-based macros, ClearKey chromakey, Virtual Studios and a range of optional control panels.

BPswitch models will ship in September starting at \$11,990, a small price increase over today’s switchers. Existing Broadcast Pix switchers can upgrade to BPswitch. The company also announced a “BPswitch Quick Start” promotion, during which buyers of new Granite and Mica switchers with a panel can pay the BPswitch price increase and receive a free Commander interface and customization toolkit, as well as a no-charge upgrade to BPswitch.



www.broadcastpix.com/Products/BPswitch.html

CANON U.S.A. INC.

CN-E 70-200mm T4.4 L IS KAS S

COMPACT-SERVO 70-200mm Telephoto Zoom Lens

The new COMPACT-SERVO 70-200mm Telephoto Zoom Lens (model name CN-E 70-200mm T4.4 L IS KAS S), is a compact and lightweight 4K lens constructed for users that demand versatility and portability. A bridge between traditional Canon EF lenses and CN-E cinema lenses, the COMPACT-SERVO 70-200mm can be ideal for filmmakers and documentary shooters who want the control and quality of cinema optics with the lightweight, compact design and features of Canon's EF lenses.



www.usa.canon.com

CANON U.S.A. INC.

Canon EOS C700 Cinema Camera

Ideal for Major 4K Cinema, Television and On-Demand Streaming Productions

Featuring a completely new, customizable, modular design, the EOS C700 meets the demands of today's productions — from feature films to documentaries to episodic dramas. The EOS C700 and EOS C700 PL cameras feature a Super 35mm 4.5K sensor with wide dynamic range, and can be ideal for productions requiring 4K UHD TV or 4K DCI cinema deliverables. The EOS C700 GS PL features a Super 35mm 4K sensor with a global shutter to enable the distortion-free capture of subjects moving at high speeds. In addition to supporting the earlier XF-AVC2 recording format, the cameras also support Apple® ProRes.



www.usa.canon.com/internet/portal/us/home/support/details/cameras/cinema-eos/eos-c700/eos-c700

CHIMERA LIGHTING

Active Diffusion

Chimera and Zylight Proudly Announce New Lighting Solutions

Zylight, a leading manufacturer of innovative LED lighting solutions, has partnered with Chimera Lighting to manufacture and distribute Active Diffusion, Zylight's patented electronic diffusion technology.

Built as a flexible, electronically-controllable LCD screen that can be utilized with fluorescents or any other cool lights, like LEDs, Zylight's Active Diffusion panel will affix to gel frames or precisely-sized Chimera softboxes.

Available in a variety of dimensions, Active Diffusion is a boon for

cinematographers, video professionals and photographers. The adjustable opacity of the Active Diffusion panel eliminates the need for an assistant as operators can instantaneously dial in the diffusion from 0-100 percent through remote-control handsets.

As a consultant for Zylight for more than 10 years as well as one of the patent holders on the brand new, electronically-controllable Active Diffusion panels, available through Chimera, Jeffrey M. Hamel has been a fixture, so to speak, in the burgeoning LED revolution since the very early days of its inception.

According to Mr. Hamel, "Chimera's new Active Diffusion used with Zylight's F8 Fresnels, for example, allows you to change from a hard to a soft source immediately, in real time. The ability to change light levels, quality and wraparound without changing diffusion frames will make this a must-have for every shoot. The technology is lighting's first "follow focus."



chimeralighting.com/active-diffusion-pr

CHYRONHEGO

VPX Virtual Production Server

Industry's First Virtual Server Platform for Live Production Workflows

The broadcast industry is undergoing a major transformation, with intense pressure to produce not only better-looking content but in greater quantities and to multiple platforms in different formats.

At ChyronHego, we're committed to helping our customers overcome these challenges by providing highly efficient, all-software solutions for end-to-end production workflows. In parallel, we're smoothing the transition from SDI-based workflows to all-IP video distribution. ChyronHego's latest breakthrough in this strategy is the all-new Virtual Production Server (VPX) — a ground-based virtual server platform that can host end-to-end live production workflows.

Until now, broadcasters had few options for bringing virtualization into the realm of production video workflows. That's why VPX is a game-changer — for the first time, broadcast news operations are able to run critical content creation and playout software in a virtualized, IT-based environment. They can create highly efficient, cost-effective and easy-to-manage live production workflows for news, sports and other programs, all from virtual instances running on a single server.

VPX has emerged through the progression from baseband SDI to IP networks supporting all-software production environments (such as the CAMIO Universe), and now to the next phase — seamless and effortless video sharing through IT-based virtualization. Key milestones include:

1. All-software workflows with almost no hardware dependencies.

ChyronHego's introduction of the CAMIO Universe in 2016 created an all-software workflow for every aspect of live production including video and audio switching, broadcast graphics, clip playback, virtual sets and weather graphics, all under extensive playout automation.

2. From SDI to IP. Giving live production components the ability to share video within the software-based workflow and without the need to go through SDI is a core benefit of IP-based video distribution.
3. Standardized IT infrastructure. IP technologies are enabling broadcasters to migrate to all-software-based workflows running on standard IT infrastructure, rather than having to make new investments in proprietary hardware.

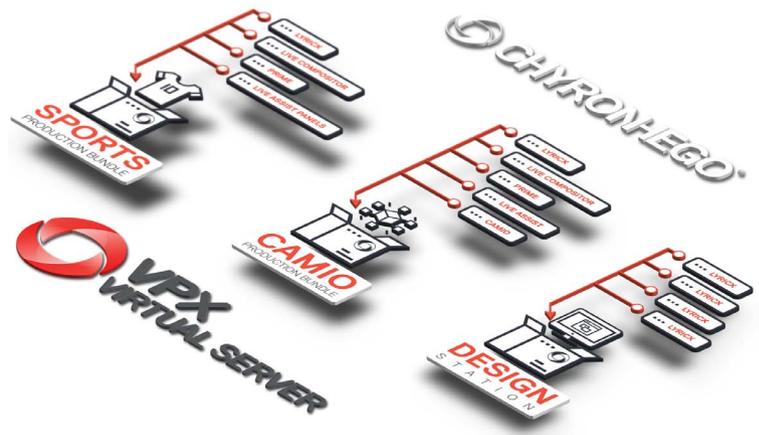
Proven Benefits

VPX delivers powerful virtualization benefits to media operations. These include:

- Scalability. Broadcasters can spin up a complete production workflow running on the VPX server at a mo-

ment's notice to support a new channel or program, and they can scale down just as quickly.

- Reduced cost of ownership. Since there's no longer any need for a separate hardware system to support each function, hardware dependencies are drastically reduced or even completely removed — yielding significant cost savings.



- Redundancy. Depending on its needs, a broadcast operation can run all of its applications on a single VPX server or, for maximum redundancy, spin up another server running the same applications.
- The right apps for the job. Broadcasters can create a mix of VPX applications from the ChyronHego product portfolio, or they can pick from two packaged VPX solutions: VPX News, which virtualizes the news production solutions from the CAMIO Universe or VPX Sports, virtualizing ChyronHego's award-winning sports-specific solutions.
- Seamless and effortless video sharing. The entire ChyronHego product family supports NewTek's Network Device Interface (NDI) video protocol, which enables live-production video workflows over standard Ethernet networks. NDI and other protocols enable all ChyronHego solutions to communicate, share, deliver and receive broadcast-quality video between the applications running on the VPX Platform.

With VPX, the technical transformation from SDI to IP to IT is complete. ChyronHego's new VPX platform truly represents the next phase in IT-based broadcast operations. It means that running live production workflows in a virtualized server environment is no longer a vision for the future, but is available to broadcasters here and now.

www.chyronhego.com



CINEO LIGHTING

Quantum c80 Full-Gamut Lighting Fixture

Features First Implementation of Cineo's Color Control Technology

The Quantum c80 (Qc80) is a full-gamut color lighting fixture featuring 50,000 lumens of Cineo's proprietary color-tunable white light. The Qc80 also includes a full RGB gamut, which works in conjunction with the reference-quality white light as a complete, creative lighting toolkit. Intended applications for the Qc80 include cinema, broadcast or any other fields where predictable, repeatable lighting technology is needed.

To support the Qc80's innovative approach to saturated color technology, Cineo has developed a simple, four-channel interface that provides control locally using the system's graphical control panel, through traditional wired DMX or with the Integrated LumenRadio™ CRMX bi-directional wireless DMX/RDM control.

The versatile Qc80 provides results for end users that are unachievable with any other lighting instrument. The same color shading can be realized through the camera regardless of the CCT used for photography. For example, +2 Green added to 3000K CCT will look the same as +2 Green at 4500K to the correctly white-balanced camera. In addition to Cineo's proprietary phosphor-converted white light LEDs, the Qc80 is the first unit designed with phosphor-converted saturated color LEDs, thus extending Cineo's deep-red color rendering technology. Cineo's Photo Accurate Dimming, which maps both local and DMX control to camera f-stops, is also fully supported.

The Qc80's color LEDs use the same die as its white LEDs,

achieving identical thermal stability. This allows for the color to remain consistent throughout the lifetime of a fixture. This product consistency means that customers will achieve the highest-quality results over the extended lifetime of the product.

Weighing in at under 40 pounds, Qc80 measures 2 feet x 4 feet x 5.5 inches, including the internal 800-watt power supply. As with all Cineo products, it features flick-free operation and a silent, passive cooling system without fans to ensure that no noise from the unit will disrupt a shoot.

The built-in USB port provides 5VDC power for accessories and supports uploading of new firmware as new features become available.



www.cineolighting.com/qc80

CISCO

Cisco IP Fabric for Media

Reliable, Scalable IP Fabric for Broadcast Production in Any Environment

Cisco® IP Fabric for Media enables content providers and broadcasters to migrate from legacy SDI to a flexible and scalable IP-based infrastructure. Optimized for media workflows, it is based on Cisco Nexus® 9000 Series Switches, with the Cisco Data Center Network Manager (DCNM) acting as a software-defined networking (SDN) network controller providing open integration to broadcast industry controllers. The Cisco IP Fabric for Media uniquely provides deployment flexibility for any environment, offering both data center and — newly released — modular switch architectures that can be implemented anywhere: outside broadcast trucks, stadiums or traditional studios.

The solution meets key broadcast requirements, such as providing the same level of quality and robustness in today's SDI infrastructure, while offering a scalable network that can support growth in bandwidth demand from 10 Gbps to 100 Gbps and beyond. This is accomplished on a unified IP network that supports live- and file-based workflows with a non-blocking multicast transport for video, audio and metadata signals, ensuring low latency, jitter and packet loss.

A key element of the solution is the Cisco DCNM, which provides an SDN Controller to abstract the underlying network complexity from broadcast production systems. The DCNM optimizes and prioritizes network traffic to guarantee quality of service (QoS) for uncompressed live video. The DCNM offers a high level of network visibility for diagnostics, monitoring and management of multi-signal transport to simplify operations. It also offers network access and end-point admission security. Open interfaces to broadcast production systems with integration and validation across key ecosystem vendors ensure faster deployments and less risks while maintaining existing broadcast workflows.

Since launch, the Cisco IP Fabric for Media solution has been proven in multiple deployment environments by global media and broadcasting customers, supporting live sports, news and studio production. Current deployments ranging from data center architectures, outside broadcast trucks and traditional studios are enabling customers to reliably migrate

to IP and gain the agility to reprogram broadcast production with the facility of standard IP networking, while leveraging the cost structure of commercial off-the-shelf infrastructure.

Importantly, the Cisco IP Fabric for Media provides a future-proof foundation that is 4K-ready. This enables broadcast production trucks to roll-out with the flexibility to accommodate multiple formats and studio environments to be prepared to support ever-greater resolutions to create immersive experiences.



Customers with diverse requirements are able to deploy the IP Fabric for Media solution that suits their environments, from the most space- / power-constrained to the most expansive footprints. A common fabric and SDN controller ensures the scalability and ease of operation in both data center/spine and leaf architectures as well as modular switch architectures.

The IP Fabric for Media solution is part of Cisco's Media Blueprint, a set of IP-based infrastructure and software that accelerates the creation, delivery and monetization of immersive media. Designed for broadcasters and content providers, Cisco Media Blueprint solutions have been developed in concert with leading ecosystem partners to move large-scale media content to the right people at the right time and in the right format.

www.cisco.com/go/media

CLEAR-COM

V-Series 32-Lever-Key Intercom Panel

Higher Density. Native IP. Advanced Programmability.

Clear-Com introduced the new V-Series 32-lever-key intercom control panel at the NAB Show. This panel is a full-featured operator key-panel for the Eclipse HX intercom systems. It offers 32 talk with separate listen assignable lever keys, requiring broadcasters to dedicate less desk space for high quantity of physical keys.

Clear-Com already offers this series of panels in lever-key option as well as in push buttons and rotary. What the company is announcing here are new-and-improved, higher-density lever panels that offer 33 percent more keys than the current models.

More keys are fitted into the same panel space without compromising on label display or other features that were previously available. There will be four basic types of lever key-panels: a 1RU with 12 keys, a 2RU with 32 keys, a desktop unit with 12 keys. Accompanying this launch is a 16-key expansion panel for greater capacity. So, it is now possible for a user to access 48, 64 or 96 keys using one, two or three expansion panels, respectively. Eight named shift pages provide additional key labels on the main panel.

New to the V-Series 32-key lever come four programmable function buttons used for immediately accessing advanced system functions. Located on the front of the panel, they enable faster execution of common panel operations or advanced level operations available in the Eclipse HX systems. Now users do not require any special training to initiate these operations.

Unique to Clear-Com's V-Series panels are the OLED label display can fit up to 10 characters of any alpha-numeric characters and supports international fonts such as Cyrillic, Hangul, Hebrew, Kanji, Katakana and

Arabic. The yellow OLEDs provide high contrast in dim environments and greater visibility even under bright sunlight.

Today current models of Clear-Com's V-Series lever panels are in control rooms, mobile units, remote bureaus for broadcast productions, sports productions and even live event coverage in virtually in every corner of the world. Because of the native IP connection on every panel, broadcasters can take a panel to any location where this is a network (internet, LAN and WAN) connection and immediately start communicating with other users on the Eclipse HX system network of up to 64 Eclipse HX sub-systems.



Furthermore, the Listen-Again feature is distinctive to V-Series panels. An operator can skip to and play back incoming audio messages that he/she may have missed. A new speaker design delivers improved audio quality providing the vocal clarity that is associated with Clear-Com.

Clear-Com is very excited about this new addition to its line of user key-panels for broadcast operators. The higher key density, built-in IP and advanced programmability mean operators are now able to reach more communication destinations over native IP or analog connection with simplified operations.

COBALT DIGITAL INC.

Channel Integrator Playout Processor

A Complete Linear Channel Playout Processor for the openGear and BBG-1000

The New Cobalt Digital Channel Integrator is a complete audio, video, metadata processor for openGear and has been engineered to meet the demands of multiple markets including professional content producers and providers. Also known as the 9902-UDX-DSP-CI, the product's comprehensive list of features and benefits represents the culmination of Cobalt's 20 years of signal knowledge and expertise.

A single 2RU openGear frame supports 10 Channel Integrator processors, each handling the work of multiple RUs worth of equipment traditionally required, now achieved on a single card. Engineers are tasked with receiving various signal types and standards, formatting them to the exact video, audio and metadata configuration needed for the end user or consumer. Content providers and aggregators need an easy-to-deploy means of integrating and optimizing the audio/video/metadata components that make up a modern broadcast or OTT channel. The 9902-UDX-DSP-CI Channel Integrator 3G/HD/SD-SDI/CVBS Up/Down/Cross Converter provides the densest signal conversion and processing tool set required to conform input analog and digital audio and video signals and their associated metadata to meet sophisticated content/channel delivery requirements.

Cobalt offers the widest range of connector panel choices for the openGear version with rear I/O options that are sure to meet system design wiring requirements.

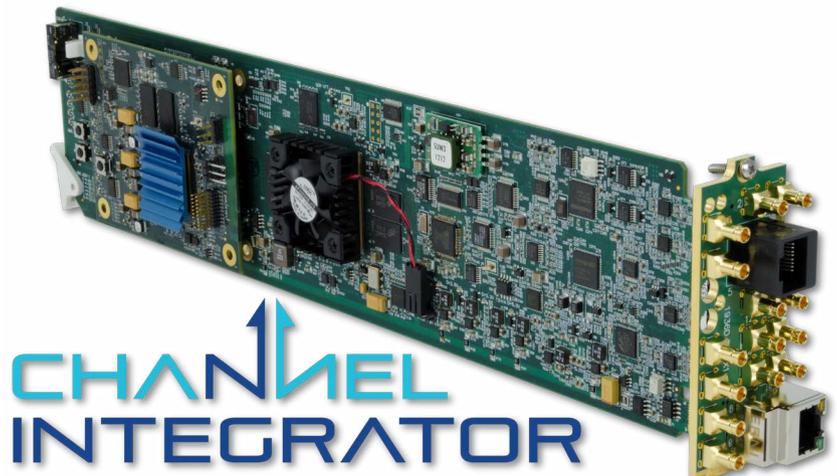
Coax connections can be BNC, DIN or HDBNC and can be configured with a SFP I/O port option adding support for either HDMI, fiber optic or IP In or Out. (SMPTE 2110 or 2022-6). Leveraging the flexibility of the passive rear I/O architecture of the openGear system allows the addition of advanced functionality in the form of hardware add-on options including MPEG-2 and H.264 decoding and H.264 encoding, multiviewing and routing. Enhanced video processing includes broadcast-quality Up/Down/Cross conversion with Noise Reduction and Detail Enhancement. Standards Conversion between 50 Hz and 59.94/60 Hz based video standards makes the 9902-UDX-DSP-CI perfect for rentals and international signal aggregators and distributors in the OTA, cable, DBS and OTT markets. The input stage is equipped with a RP168 clean switching four-input router and can accept changing input formats (SD/HD) on the fly and set up the specified converted output raster extremely quickly.

This means less converters to perform the conversions upstream of the CI and reliance on the CI to handle the input format changes as grace-

fully as possible with minimal disruptions to the output picture.

The unit can also use AFD (Active Format Descriptor) metadata to ensure the output raster is ideal and you don't end up with a "postage stamp" image where you have black bars on top, bottom and sides of the image.

Channel Integrator audio features include analog and AES audio embedding and de-embedding with multiple mixers and per-channel delay.



Optional Linear Acoustic UpMixing, Dolby decoding and encoding (E, AC-3, E-AC-3) and RTLL Real-Time Loudness Leveling make the Channel Integrator a single point of command and control for your toughest audio processing jobs. The system offers valuable metadata processing and monitoring features including Cobalt's award-winning SCTE104-FAST Frame-Accurate SCTE Trigger insertion option providing Automation & Traffic system driven, deterministic data insertion based on specified timestamps and incoming timecode in the program video, or using UTC time derived from the openGear frame NTP reference.

An event-based preset recall engine provides the ability to monitor for audio/video/data status and automatically engage controls (switching, mixing, keying, etc.) based on user-defined rules.

This means the system essentially runs in a set-and-forget manner while automatically accommodating the changing input requirements of an installation.

www.cobaltdigital.com/products/4112/9902-udx-dsp-ci

COBALT DIGITAL INC.

FAST-Stream OTT Insertion and Streaming

Frame Accurate SCTE Trigger Insertion and Enhanced H.264 Streaming System

Cobalt Digital's FAST-STREAM OTT (Frame Accurate SCTE Trigger insertion and enhanced H.264 Streaming) system integrates Cobalt's baseband SDI processing knowledge with their video compression expertise resulting in a complete linear playout to VOD and OTT processing and encoding package. The FAST-STREAM OTT platform is housed in the 2RU Cobalt HPF-9000 or OG3-FR openGear frame and is controlled via the DashBoard control system or via SNMP. The system is available in single- or dual-channel configurations and one 2RU openGear frame will support 6 FAST-STREAM channels. For added flexibility the system is available with a x86 computer module that is housed in the 2RU frame alongside the FAST-STREAM OTT modules and takes advantage of the dual load-sharing power supplies and high-performance cooling. FAST-STREAM OTT is comprised of three processing blocks and each block performs a key function.

The first stage uses programming information and timestamps from automation playlists to intelligently insert frame accurate SCTE 104 messages into linear baseband 3G/HD/SD-SDI playout channels. This SDI processing stage can optionally provide a range of additional functionality such as Text-To-Speech, Trouble Slide insertion, EAS crawl generation, Up/Down/Cross conversion and pre-compression Noise Reduction. These features can be installed to deployed FAST-STREAM OTT systems via a license key, which means the system capabilities can expand as the channel requirements change. This system component is the 9922-FS unit and is also available for frame-accurate baseband only SCTE 104 applications.

The second stage performs a mezzanine level H.264 video encode and AAC or MP1L2 audio encode. This encoding stage also converts the incoming SCTE 104 into SCTE 35, which is the 104 equivalent in the compressed domain. Additionally, Closed Captioning data is maintained through this process which makes FAST-STREAM OTT a great metadata enrichment tool for all types of streaming applications. This system component consists of the 9223 series of H.264 encoders, which is also available for standalone

encoding applications. The final processing stage is where the SCTE 35 messages are used to decorate the HLS (HTTP-Live Streaming) stream contents by inserting frame accurate program boundary and segmentation markers at the beginning and end of all programming and advertising clips. The SCTE 35 messages are carried in the HLS Manifest File for downstream use. This final stage of the process is accomplished using the 9990-TRX Transcoder, which supports multichannel MPEG 2 and H.264 requirements.



The system is being used for new and exciting applications and has the processing power to accommodate emerging use cases as the markets evolve. Some of the benefits that users are realizing with FAST-STREAM OTT are:

- **AUTOMATIC CVOD OUTPUT** — Start monetizing CVOD assets in minutes versus hours. Files are automatically, frame-accurately produced using SCTE 104 Program Start & Stop messages, providing output immediately following air.
- **ADVANCED META-TAGGING** — All aspects of your programming are automatically marked in SCTE 104, including programs and program segments, promos and commercials, content restriction flags and metadata managed in a secure cloud-based repository, including Ad-ID/ISCI, EIDR codes, and more.
- **ONE-TO-MANY FILE & STREAM OUTPUTS** — Limitless outputs help you quickly get your CVOD, SVOD, AVOD and DVR assets from a single feed so you can monetize content in more ways and grow revenue. MPEG 2 TS and HLS stream outputs include automatic translation to SCTE 35 for all inserted messages and metadata.
- **ENABLES AUTOMATIC AD REPLACEMENT** — Get ads in front of more viewers with advanced feed decoration that enables server-side and client-side dynamic ad replacement using SCTE 104 and 35.



www.cobaltdigital.com/products/4099/fast-stream

COMPROMPTER NEWS AND AUTOMATION

Caption Central Multi Voice Captioning

CCM Identifies Each Speaker by Name and Title

Caption Central Multi (CCM) is designed to solve four major problems of closed captioning:

- 1. Completeness** — CCM passes through scripted ENT captioning and supplements any unscripted comments, segments or complete shows with Live Voice Captioning. Thus, 100 percent of any show is captioned;
- 2. Single Voice Recognition** — Caption Central Multi tracks up to 40 speakers backed by a 300,000+ word dictionary plus hundreds of custom local vocabulary words sharable by all speakers. Producers can set up newscasts and other shows with the talent, studio location, mic number and an on-air name and title for up to eight simultaneous speakers so that with a single click those settings can be loaded and ready to go to air within 20 seconds.

For example:

Bill McWha, Baptist Minister >> “The Law steps in only when individual morality has failed...”

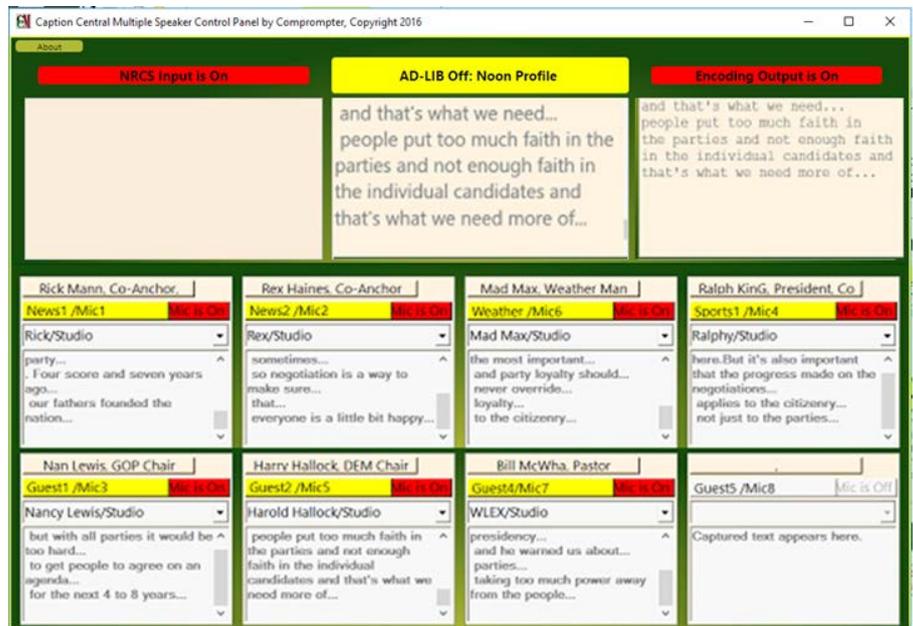
Charlie Williams, Agnostic Society >> “Granted ... but the moral issue of right and wrong does not have to be based solely on religion.”

Thus, for the first time, the hearing-impaired viewers know who is saying those words and can attach meaning by knowing the point of view of that speaker.

- 3. Real-Time Transcription** — Hand Captioning typically delivers captions 4–8 seconds behind the speaker with no link to who said those words. CCM keeps every conversation in sequence ... regardless of the number of on-set speakers, or the order in which they speak, CCM presents the words spoken in the studio in the real-time sequence and identifies who spoke them.

Typically, Caption Central Multi’s text output runs about 2 seconds behind real time! And each sentence is Spell- and Context-checked prior to sending it to air to assure CCM chooses the most accurate form of the word. — For example: “The girl threw the ball through the window.” — Or, “The wind blew the blue ball across the yard”.

- 4. Emergency Broadcast Delays** — mostly caused by the time it takes to make arrangements with a captioning service for a typist. CCM is ready to go as soon as the anchors have their mics on and are camera ready — a simple click of the AD-LIB button creates the script and en-



codes the text LIVE while they speak. Caption Central Multi supports many English Accents in order to fine tune pronunciations and speech patterns for each speaker, different regions and nationalities.

English Accents include: Standard American ... Inland Northern U.S. ... Southern U.S. ... Australian ... British ... Indian ... Spanish ... and South East Asian. Many foreign languages are also supported.

Languages Include: U.K. English ... French ... German ... Italian ... Spanish ... Dutch ... and Japanese. And new languages are being added this year. The Caption Central Multiple Profile system (CCM) comes packaged as a plug and play rackmount system configured as a four or eight speaker system. The system includes built-in LAN and audio input support. CCM is compatible with any broadcast newsroom system and caption encoder. The client simply provides the newsroom data feed and the audio feeds

Caption Central Multi is simply the best, most powerful live voice captioning system on the broadcast market today.

CONTINENTAL ELECTRONICS CORP.

CTX Series UHF Solid-State Transmitter

First Solid-State UHF Transmitter to Use Efficient GaN Technology

The Continental CTX Series UHF TV transmitters are the first to utilize the advanced energy efficient GaN devices in each of its liquid- and air-cooled transmitters. This technology represents a leap forward in solid-state affordability over the life of the transmitter. Not only are the capital costs comparable with other transmitter technologies, the operational costs are much lower because of the more efficient operation and longer device life. You can expect efficiencies up to 50 percent on UHF channels.

The Gallium Nitride (GaN) transistor is the prominent device for wideband wireless applications because of its efficient and low-temperature operation.

In the past, despite the compelling advantages of GaN being up to 10x more reliable, it also came at a higher cost structure at lower frequencies, which slowed its mainstream adoption. But today, its wide use, exceptional performance and broadband requirement put the GaN cost structures in line with competing UHF devices such as LD-MOS and make it ideal for TV transmitter PAs.

In addition to the efficiency advantage, GaN transistors operate at a wider temperature range allowing for a more efficient cooling solution and greater long-term reliability. Other GaN advantages include, reduced heat sink requirements, reduction in system volume and weight, increased output power and true broadband operation. The broadband operation is not just “optimized” for a particular channel, but has a flat RF response over the UHF television band. This has implica-

tions for broadcasters who need to transition and temporarily be on one channel during the repack and then convert to another channel. It also reduces the amount of spare inventory required to support multiple transmitters operating on different channels. The design also allows for easy scalability of power levels by adding amplifiers or amplifier cabinets to the configuration.

The CTX Series transmitters contain many features commonly found in today’s transmitters and beneficial to broadcasters. The amplifiers utilize a broadband Doherty design, which adds to the efficiency and broadband operation. Hot-swappable power amplifiers and power supplies are used for ease of maintenance and operation. On-air replacement of the amplifier tray is easily made by simply removing the unit and inserting a spare. The same is true for the power supply. An N+1 pump solution is offered in the liquid-cooled models and communication to the transmitter is via external PC or optional local touchscreen.

Support for the CTX Series is based in Continental’s manufacturing facility in Dallas, Texas. Continental Electronics has over 70 years of RF experience in many industries and has supplied transmitters to broadcasters worldwide. In addition to UHF and radio transmitters, Continental has delivered equipment for some of the foremost RF applications including NASA’s Deep Space Network, mission critical military communications and radar, advanced medical particle accelerators and atomic timing stations.



CORE SWX

Fleet Micro Charger

Offers the Fastest Battery Charging Times in the Industry

The range of Fleet Micro Chargers offers the fastest battery charging times in the industry (four 98 wh packs in less than 2.5 hours) and includes v-mount and 3-stud charging solutions, with two and four position options for each. All Fleet Micro Chargers are compatible with all Core SWX, RED® and Anton/Bauer® battery packs, providing peace-of-mind to multiple crews on location with legacy packs or rental batteries.

Every Fleet Micro Charger will incorporate a backlit LCD to display all pertinent battery data. Users will be able to charge power solutions using one of four modes: SafeFly mode, which allows the Fleet Micro Charger unit to discharge/charges all battery packs connected to 30 percent, making them within IATA regulations for safe air transport; Fast

Charge mode, which charges battery packs 20-percent faster than the competition; Test mode, which determines battery health and recharge performance; and Hypercine mode, which parallels all packs and provides power to either an unregulated 12v-16.8v 4-pin XLR or regulated 28v 3-pin XLR DC output to power large-draw setups.

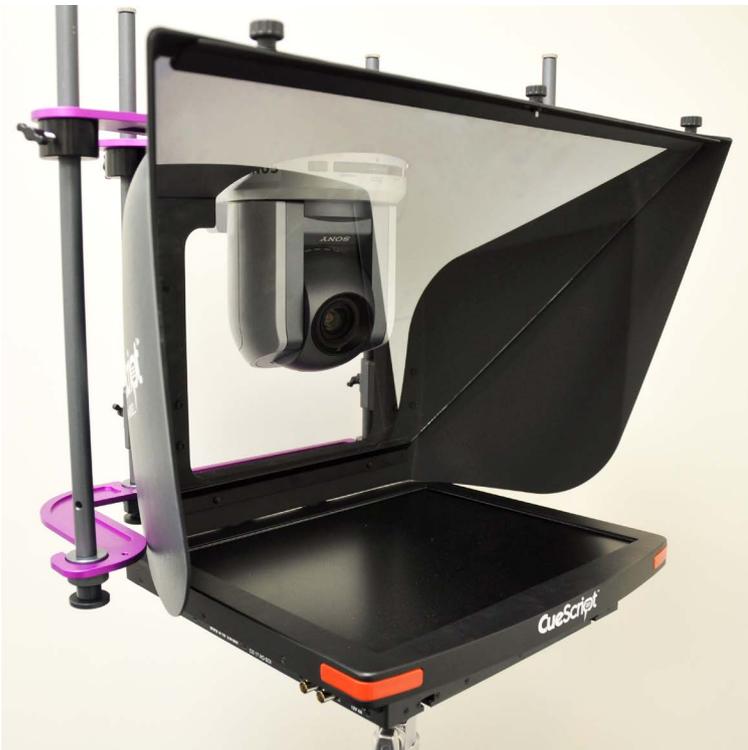
In addition to these modes, each Fleet Micro Charger features a mini-USB port for free firmware upgrades and can transfer battery data to a PC for data basing. Each four-position Fleet Micro Charger will measure in at 9.1 inches x 3.35 inches x 12.17 inches and weigh 5 pounds, while each two-position model will measure in at 9.1 inches x 3.35 inches x 6.57 inches and weigh 1.8 pounds.



CUESCRIPT

CueScript PTZ Prompter System

A Unique Mounting Solution That Enables Prompting With PTZ Cameras



PTZ cameras are commonly used across a wide range of productions and sectors, from news and sports to houses of worship and education. However, using a prompter display with a PTZ camera restricts the operation of the PTZ, since they are not designed to work with prompting units. In order to solve this issue, CueScript's development team examined the way in which a prompter is used in this scenario and set about improving the mounting and operational issues.

With a patent pending, CueScript has developed a unique mounting system whereby the PTZ camera mounts upside down in the top of a specially designed prompter hood. Mounting the system this way eliminates the need for expensive tripods and makes using a lighting stand possible; a wall-mount version is also available. With the CueScript mount, the PTZ has greater movement in the shots it can achieve. Users are also able to choose from a 15-inch, 17-inch or 19-inch LED display system depending on the shoot location or the preference of the talent.



www.cuescript.tv/product-profile.php?pid=56#sthash.cc4WbBr6.dpbs

D2D TECHNOLOGIES

D2Flex 6000 Video Processor and Gateway

Powerful and Flexible Platform for All of Your Video Transport Needs

Whether you are building out new broadcast stations post spectrum auction or converting an existing station from an ASI infrastructure to an IP infrastructure, the D2Flex 6000 will meet all your digital video transport needs. The D2Flex 6000 is a powerful digital video processor and IP network gateway that transforms services from ASI, SDI and Gigabit Ethernet into a tailored transport stream ready for delivery over ASI and IP. Broadcasters, cable and IPTV operators can create their own digital video multiplex that is regionalized with advanced channel branding and optional PSIP data insertion.

The D2Flex 6000 can easily merge local content, both compressed and uncompressed, with national channels using robust digital video processing of service components from any input to create a tailored digital output stream. Demanding bandwidth constraints can be met by removing unwanted elementary streams like secondary audio or even dropping complete programs. Broadcasters who receive DVB streams can easily convert to the necessary ATSC format on any output stream.

The D2Flex 6000 is also a full duplex ASI/IP network video gateway that can remultiplex up to 16 input streams received over ASI or Gigabit Ethernet and create 16 independent IP output streams with configurable Forward Error Correction (FEC) that is compliant with SMPTE 2022-1/2/7. Network jitter and errors in transmission are corrected in the receiving system to recreate the original transport stream. Conversion from IP to ASI is supported on up to seven independent ASI outputs. The D2Flex 6000 also supports up to four channels of HD encoding or eight channels of SD encoding. The uncompressed video can be received on both SDI or Gigabit/10 Gigabit Ethernet in compliance with SMPTE 2022-5/6.

Broadcasters who need to regionalize their channels for local markets can easily control the PSIP/SI branding of their transmission and optionally insert an Electronic Program Guide (EPG) so that viewers can find the programs

they want. The D2Flex 6000 can set the major and minor channel numbers on each output stream and pass through or regenerate the necessary PSIP tables. The optional D2Guide can run on the D2Flex platform to provide dynamic PSIP data insertion from popular services like Titan TV and Gracenote (TMS) or from a spreadsheet with programming for the next several weeks.

The D2Flex 6000 platform can also host the optional D2Alert application, which inserts digital video from an Emergency Alert System (EAS)



into all of the desired channels of your ATSC digital transport stream. The D2Alert system constantly monitors the EAS digital video signal and when a valid alert is found, it is automatically inserted into all of the configured programs until the alert is complete. With D2Alert broadcasters can comply with FCC requirements and quickly inform viewers in the event of an emergency.

The D2Flex 6000 provides flexible I/O configuration options including up to seven ASI/SDI inputs and up to seven ASI/SDI outputs. Digital streams over IP are handled by the two standard RJ45 Gigabit Ethernet ports and can be optionally expanded with two additional GigE or 10GigE ports. Browser-based management of the D2Flex is done over a dedicated Ethernet (GigE) control port that supports SNMP remote monitoring with configurable traps.

The D2Flex 6000 is available as a standalone rack-mountable unit or as a reduced IO openGear® card.



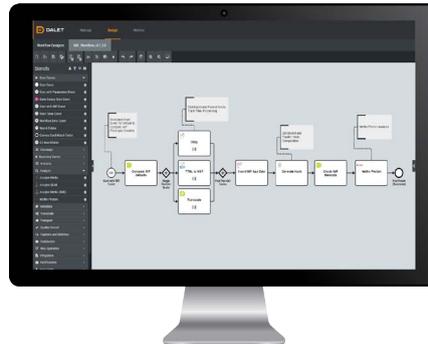
www.d2dtechnologies.com

DALET DIGITAL MEDIA SYSTEMS

Dalet Orchestration

Designed to Integrate the Media Enterprise and Unify Operations

Content owners, post-production houses, broadcasters and other media organizations face the challenge of adapting to the media industry's constant change, producing and delivering content to an increasing number of platforms, in a growing number of versions and formats. To stay ahead of the pack there is no choice but embracing change and getting the entire organization to become as agile as the requirements put on the business. The key to achieve this lies in the way the assets are managed and the workflows are distributed across the operation.



of complex end-to-end workflows in graphical and chronological views. The entire workflow progress, as well as the current task progress are presented in a user-intuitive interface.

Connecting Systems & Services to Eliminate Silos

The Dalet Orchestration solution comes with a wide range of out-of-the-box connectors, from industry standards like FIMS to pre-built, custom partner technology integrations covering simple file-based exchange — connecting file transfer applications, HSM, QC, transcoders and content analysis

to complex asset-based connectors enabling a bidirectional communication with systems such as PAM/MAM/DAM, CMS, OVP, NRCS, Graphics, Traffic, Scheduling and Billing Systems.

Further to this, the public WebServices API allows for any ad-hoc integration to be developed in house or by a contractor.

Orchestration for Media Operations

To meet these needs, Dalet unveiled at the 2017 NAB Show an advanced workflow orchestration solution. Powered by Dalet Galaxy, Dalet Orchestration automates configurable processes combining system services and customized user tasks, leveraging rich assets to enable complex tasks such as EDL, Playlist and Package creation.

Reducing the Complexity of Multiplatform Distribution Bringing Visibility

Delivered with a full Report Center, the solution brings Business Intelligence to the organization, allowing users at various levels to monitor and analyze key indicators about their operations in order to make more informed immediate decisions and over time build proper data-driven strategies.

Simple-to-Use Workflow Design Tools

A drag-and-drop web-based interface enables users to easily configure simple-to-complex workflows, where administrators can define naming conventions of assets, inputs, outputs and which assets to effect at various stages in the workflow. The rich library of workflow components associated to the native Dalet stencils ensures that any business scenario can be supported, across a variety of industries and use cases.

System-Wide Monitoring Identifies Problems and Eliminates Pain Points

Users with appropriate rights can benefit from a real-time monitoring

Dalet Orchestration Feature Highlights & Key Benefits

The Dalet Orchestration solution combines a powerful BPM engine, user tasks management with associated tools, a wide range of connectors to the media eco-system, a dedicated dashboard for real-time monitoring, and a report center for business intelligence. Highlights include:

- Web-based graphical interface to design and model business processes, including user and service tasks, decision gateways, timeout and error management
- A BPM execution engine automating workflows to improve productivity and reduce the risk of errors
- Silo-breaker leveraging a wide set of connectors to the most widely used media/metadata services and systems
- Asynchronous jobs management (transcoders, data movers, file-based QC, ...) via a real-time job scheduler
- Support for on-premise, hybrid or cloud-based deployments
- User tasks management to enable smart decisions in the workflows
- Task list available for user assignments and task lifecycle management with customizable board and list views
- Complex work order handling to process a variety of assets
- Designed for scalability with support of over 1,000 active tasks within a single workflow and thousands of simultaneous instances
- Redundant and highly available infrastructure with distributable back-end
- Business intelligence reporting to measure the efficiency of business/operations



www.dalet.com/business-solutions/orchestration

DATAVIDEO CORP.

HS-1500T Portable HDBaseT Video Switcher

Four-Channel HDBaseT Hand Carried Video Switcher

Datavideo's HS-1500T is the first portable HDBaseT video switcher in the world. The HS-1500T features joystick, knob and preset buttons for controlling pan, tilt, zoom of up to three PTZ cameras, and built-in 17.3-inch monitor for Multiview, making it a true all-in-one video switching solution. No other product on the market has features quite like the HS-1500T.

HS-1500T has three HDBaseT inputs, one HDMI input for graphics, and three HDMI outputs. It has 10-bit video processing and supports

up to 1080p resolutions. The HS-1500T is a perfect companion to Data-video PTC-150T, 30x HDBaseT PTZ camera. Thanks to the HDBaseT technology, you only need to run one Cat-6 cable from the camera to the HS-1500T, which makes setup and tear down much easier and quicker. You no longer need to find local power connection for each camera, or run multiple long cables for video, control and tally; making it a great solution for any live events productions.



www.datavideo.com/us/product/HS-1500T

DIGITAL NIRVANA INC.

Automated Sports Clipping Service

Automated Sports Analysis and Clip Generation With Caption Synchronization

Digital Nirvana's automated sports clipping service enables broadcasters to automatically generate clips of every fast-paced moment in a game and share with its audiences. The sports clipping service is coupled with automated caption synchronization, empowering users to publish sports media content online and via social media without time lag while complying with new FCC regulations that will take effect in July.

Digital Nirvana's sports clipping service is the first of its kind — offering automated clipping with metadata and caption synchronization simultaneously. Enabling content creators to easily gather and generate clips from multiple sporting event airings simultaneously, the service makes broadcasters' operations more efficient. Broadcasters can also quickly pick and choose content to publish sports clip montages, saving time and cost.



The sports clipping service automatically analyzes sports broadcasts in real-time and generates ready-to-publish clips of those highlights. The service can also generate highlight images and GIFs for customers' social media promotional activities. Offering state-of-the-art workflow and customization capabilities, Digital Nirvana's sports clipping service reduces manual intervention in broadcast operations while catering to the viewers' needs and meeting compliance requirements.

The service improves the ways in which broadcasters make high-quality video accessible for audience consumption from anywhere, at anytime. Automatic closed captioning engages audiences more, particularly on social media channels when people are tuning in while in public places without their audio on, such as the subway or a coffee shop.

digital-nirvana.com

DTV INNOVATIONS

Chimera — Professional Video Encoder

Professional Portable Video Encoder/Satellite Modulator in Your Palm!

DTV Innovations' Chimera provides broadcasters with a compact highly portable video encoder capable of fulfilling OTT streaming, ENG/DSNG and over-the-air broadcast encoding requirements.

More than 20 years of broadcasting experience went into the design of the Chimera portable video encoder. Chimera was designed to address the requirement for a highly portable and easy-to-use video encoder most often deployed in locations where physical space is limited, thus making a rackmount design less than ideal.

With professional HD-SDI and HDMI inputs, broadcasters and "prosumers" can choose the camera that best fits their requirements and budget, and stream directly to YouTube via Chimera's TSoIP (with full FEC supports, SMPTE2022-1,2,3), RTMP and DASH (HTML 5.0) outputs one day, while connecting the satellite modulator output to a fly-away system the next day to deliver broadcast-quality video from the most remote regions of our planet. It can also be used as a backup Encoder in the main transmission. It supports Dolby AC-3 and MPEG-2 Encoding.

Adding Chimera to your stable of video encoders is a wise investment.

Chimera is easily hand-carried between local high-school sports venues to stream content over the internet. It is also a cost-effective means of temporarily adding an additional path or spare encoder to an existing DSNG truck when a higher level of service is needed to support high profile events. For the prosumer, Chimera can easily live-stream any events to the internet like weddings, school classes, seminars, etc.

At just 26.5 x 18.4 x 10 cm (10.5 inches x 7.25 inches x 4 inches), Chimera packs many features in a diminutive package. In the palm of your hand or a small backpack, Chimera fulfills the functionality of a professional video encoder, a very capable satellite modulator and a confidence monitor that doesn't require a magnifying glass to actually see that you have a valid and usable video source.

Chimera supports the most commonly encountered audio and video encoding formats including: MPEG-2/H.264, 720p/1080i, 8 bit 4:2:0 video with eight pairs of audio. Audio may be encoded per the MPEG-1 layer II, HE-AAC/AAC-LC, or Dolby AC-3 standard, thus allowing Chimera to be used as a backup to the primary encoders used for over-the-air broadcasting at most television stations.

Chimera's internal satellite modulator provides DVB-S/S2/S2X modulation up to 64 APSK. It has both IF and L-Band (with 10 MHz reference) outputs and is DVB CID-compliant. The design has recessed connectors to avoid unintentional damage during transportation or field use.

Controlling Chimera is easily accomplished using its 10.1-inch capacitive touchscreen and intuitive menu structure. The 1280 x 800 resolution of the backlit LED screen makes an ideal confidence monitor to confirm that Chimera is receiving a compatible video source. It can also be controlled remotely via web interface.



Additional features in Chimera including BISS Encryption, IP Chain Mux and Multiple Streams over the satellite.

DTV Innovations' roadmap for Chimera includes adding Stream Analyzer, PSIP Insertion, other CAS encryption, and Meta, Ancillary, and proprietary data insertion capability.

The starting list price for Chimera is US\$5,500 while adding the satellite modulator increases the price to just US\$9,500.

www.dtvinnovations.com/chimera

DTV INNOVATIONS

HYDRA Terrestrial TV Distribution System

ATSC 1.0 and 3.0 Terrestrial TV Distribution Platform in a Box!

DTV Innovations' Hydra Terrestrial Television Distribution platform provides broadcasters with a cost effective method of replacing/adding new ATSC 1.0 services today while preparing for the launch of ATSC 3.0 services in the future.

More than 20 years of broadcasting experience went into the design of Hydra. Hydra is a full ATSC 1.0-compliant platform, which provides video encoding, multiplexing and PSIP (EPG Insertion) within a single easy-to-use platform, thereby eliminating the potential for incompatibilities often encountered when integrating a system from multiple products or vendors. DTV Innovations often finds itself troubleshooting third-party equipment while providing implementation support to a station that "simply" needed to have PSIP. Our brilliant engineering staffs know that there have to be an easier method, thus the concept of Hydra was born.

The same platform can be used for HEVC encoding with all the signaling, service announcement (PSIP/EPG in ATSC 3.0), and STL wrapper. (It will have full Broadcast Gateway option once the ATSC 3.0 specification for this is formalized.) Hydra provides a robust and cost-effective solution for all broadcasters to launch an ATSC 3.0 service trial today.

DTV Innovations has worked closely with several ATSC 3.0 modulator companies, including Teamcast and Dektec to ensure that Hydra platform will work seamlessly with their products. Launching an ATSC 3.0 service is as easy as connecting any SDI source to Hydra, and connecting its output to one of our modulator partners' products. It's as easy as that! Hydra eliminates all of the potential headaches associated with launching an ATSC 3.0 service.

Hydra is also an excellent solution for the spectrum repack problem. Hydra can receive MPEG TS from other TV stations via IP, encode the local video streams, multiplex the signals, and insert PSIP/EPG for both major stations with different Virtual Major Channels numbers (e.g. VC 7.1, 7.2 and 32.1, 32.2). It can even ingest the EPG information from different media server or traffic systems for each major channel and merge them together.

Hydra will simultaneously encode up to eight channels services (via 3G SDI input interfaces) using the MPEG-2 standard, multiplex the services together, facilitate the importation of an EPG listing service such as Gracenote, TitanTV or from traffic system, Excel spreadsheet ingest, and generate all of the tables required by ATSC 1.0. Moreover, the Hydra platform can be software-upgraded to generate an ATSC 3.0-compatible signal, thereby protecting your initial investment.



DTV Innovations' experience in designing, manufacturing and supporting video encoders, multiplexers and PSIP solutions provided the understanding necessary to develop a cost-effective and easy-to-use platform capable of accomplishing all of these tasks.

DTV Innovations' roadmap for Hydra includes Statistical Multiplexing, Broadcast Gateway for ATSC 3.0, ATSC 1.0 and ATSC 3.0 Stream Analyzers and International support (ISDB-T and DVB-T2).

www.dtvinnovations.com/hydra

DVEO

TV APP Maker

Telcos Can Make Channels for Roku® and Android™ STBs in Minutes

DVEO's TV APP Maker is a professional application for creating OTT or IPTV channels on Roku® or Android™ set-top boxes.

It enables anyone to quickly insert a private channel icon on any Roku® or Android™ set-top box and obtain a new channelized lineup of content that is served via a DVEO ATLAS™ packaging server.

All one does is insert a "code." Each channel will appear on a "splash home page" with icons and brief descriptions. The purpose of this app is to enable smaller telcos, schools, churches, hotels, venues or other organizations to inexpensively create a community of viewers. Private channels are not displayed on the Roku® channel store unless added manually. Once added, however, the channel will be visible thereafter. P.S.: There are over 20,000 private channels on Roku®.

Capabilities

Instead of hiring a software developer, simply enter HLS links to videos, then customize the apps with your branding — add logos, video titles, descriptions, pictures, different backgrounds/colors, URLs, etc. The flexible software provides a variety of different backgrounds and type fonts. Create, edit and manage all your apps with one software application.

The TV APP Maker software can play live or VOD HLS URLs from CDNs or other servers. It supports all broadcast resolutions.

There are no monthly or annual fees and no charges to load videos.

Other Equipment Needed

The TV APP Maker relies on DVEO's ATLAS™ Packaging Server to serve the channels. To groom all streams to the needed resolution and bit rate, we recommend Brutus™ Telco transcoders.

Options

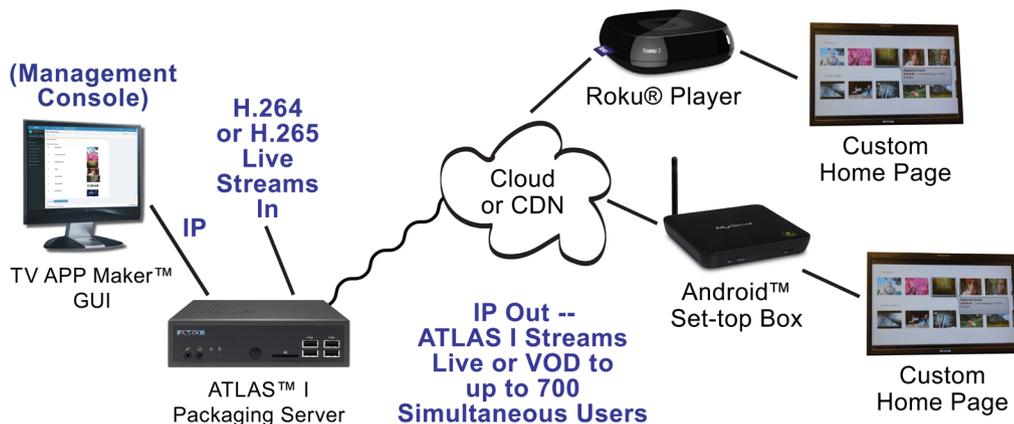
The TV APP Maker is an addable feature to DVEO's Brutus™, Gearbox II™, Gearbox™, Ministreamer™, MultiStreamer™ and D-Streamer™ product lines. It is also available as a small standalone system to use with CDNs.

Operators can also monitor streams via third-party monitoring services.

In Conclusion

This software was developed to provide churches, schools and small telcos an inexpensive starting point for launching a video service.

The TV App Maker is provided as a means to support anyone who needs less than 2,000 units and does not need a billing system.



EDITSHARE

EditShare Single-Node Storage Solutions

XStream EFS 200 & 300 Open Doors to Scale-Out Storage for Smaller Productions

To better address the requirements of growing media facilities, at the 2017 NAB Show EditShare introduced the single-node EFS storage system models, XStream EFS 200 and XStream EFS 300. Based on the enterprise XStream EFS platform, they combine the capabilities of their EFS metadata controller and a storage node into one compact, affordable and powerful shared storage server that can easily satisfy today's production needs while also establishing a "no forklift" upgrade path to expand capacity, performance and fault-tolerance as the production expands and evolves.

XStream EFS 200 Configuration

The XStream EFS 200 is a single-node configuration with 12 enterprise-grade HDDs offering 24, 48, 64, 96 or 128 TB of raw storage capacity in a 2U space-saving form factor. The XStream EFS 200 is "EFS Native Client" compatible. Client workstations connect via a lightning-fast, multi-threaded client to achieve a performance boost of 20 percent or more compared to legacy SMB and AFP network protocols. In addition to media management capabilities like advanced project sharing, the XStream EFS 200 ships with five Flow production asset management licenses and an Ark archiving application. For a full description of the XStream EFS 200 model, please visit www.editshare.com/products/xstream-efs-200.

XStream EFS 300 Configuration

For customers who need greater capacity and lower cost per TB (usable) than is available with XStream EFS 200, they can step into the XStream EFS 300. Equipped with 16 drives, the XStream EFS provides 28, 56, 84, 112 or 140 TB of usable capacity in a 3U chassis. Along with increased capacity, the EFS 300 has additional processor power delivering increased bandwidth capability and stream counts. Like the EFS 200 series, the EFS 300 is "EFS Native Client" compatible and benefits from a performance boost of 20 percent or more compared to legacy SMB and AFP network protocols. In addition to media management capabilities such as advanced project sharing,

the XStream EFS 300 ships with 10 Flow production asset management licenses and an Ark archiving application. For a full description of the XStream EFS 300 model, please visit www.editshare.com/products/xstream-efs-300.

Like other XStream EFS products, these new products are based on the EditShare File System and provide dynamic performance and impressive fault tolerance while streamlining administrative tasks and providing a plug-and-play upgrade path. Unlike other XStream EFS products, however, the new EFS 200 and EFS 300 are the first to provide the option of starting with a simple, affordable and scalable single-node solution that are also promoted with the Flow Media Asset Management and Ark Media Archive applications. This combination of complete



workflow support, right-sized capacity and cutting-edge scale-out storage features is ideal for equipping small or emerging media operations and can also become their long-term enterprise grade shared storage platform.

The premium XStream EFS storage platform is a powerful, distributed scale-out file system combined with a highly resilient architecture, specifically developed for media intensive workflows. It's designed from the ground up to support large-scale workgroups requiring high-bandwidth, high-volume media ingest, transcoding, online collaborative editing and multiplatform distribution of HD, 2K, 4K and beyond. Whether a one-node or multi-node system, every XStream EFS model can easily be expanded to increase capacity and bandwidth. For ease of use and administration, all XStream EFS systems present a single namespace, regardless of the system size. And unlike many SAN storage solutions, the performance of XStream EFS does not decrease as storage use increases. Its continual optimal performance and outstanding reliability are backed by RAID 6 technology.



www.editshare.com/products/xstream

ELEMENTAL TECHNOLOGIES

AWS Elemental 4K Video Services

Live Streaming 4K Video From Space With NASA, NAB and AWS Elemental

Amazon Web Services, in collaboration with the National Association of Broadcasters (NAB) and NASA, produced a Super Session during the 2017 NAB Show. On April 26, this event included the first-ever live 4K video streamed from space, made possible by NASA with Amazon Web Services technology. The live feed from 250 miles above Earth was encoded and delivered by AWS Elemental software on board the International Space Station and on the ground at Johnson Space Center. AWS Elemental also delivered a live stream of the event via a workflow that included AWS CloudWatch, Amazon Route 53 and Amazon CloudFront for public access in both 4K and HD.

This event showcased how Amazon Web Services can help developers support 4K live video end-to-end from encoding to delivery on multiscreen devices at scale.

It is also illustrative of how AWS is helping NASA enhance its ability to observe, uncover and adapt new knowledge of orbital and deep space.

AWS Elemental Live encoding was seamlessly integrated into a real-time 4K HEVC workflow anchored by a 4K camera on board the ISS. Video was set up, controlled and managed over an IP network from a single, user-friendly AWS Elemental user interface. The AWS Elemental Live system encoded content in HEVC and sent it in a UDP transport system (UDP/TS) over the ISS network to Johnson Space Center in Houston along with a separate HD audio stream. The AWS Elemental unit on the ISS featured a small form factor encoder to accommodate space constraints; heat capacity and exothermic release within structural tolerances and zero-gravity space; and reduced power consumption for long-term remote deployment.

The 4K video signal was decoded at Johnson Space Center and com-

binced with the audio signal to produce a 4K video/audio stream. This input was routed to two AWS Elemental Live encoders, which transcoded two HEVC video outputs for distribution; a primary signal to be distributed via satellite and a second, redundant signal for delivery by IP network directly to the Las Vegas Convention Center (LVCC).

Two fiber feeds delivered the disparate streams to individual decoders. The output of each decoder provided an input into the live switcher and provided an output for video confidence monitoring. Having both feeds delivered hot into the live production switcher provided the ability to switch “on the fly” between the unique video paths at the video director level.

Lastly, the feed was delivered to *live.awsevents.com/nasalive4k* from the LVCC. The live production switcher fed an SDI DA, which allowed the input signals to be replicated to two onsite AWS Elemental Live encoders. The two AWS Elemental encoders provided redundant transcoded multi-bitrate outputs for IP delivery to an AWS Elemental Delta video delivery packager. Two instances of AWS Elemental Delta provided redundant packaging of HLS outputs for IP delivery. Amazon Route 53 provided DNS, redundancy and routing policies (for failover) to manage the flow of traffic. Amazon CloudFront

provided the global content delivery network of the live stream and Amazon CloudWatch provided monitoring of the streams.

By streaming real-time video that captures images four times the resolution of current HD technology, Amazon Web Services is enhancing NASA’s ability to observe, uncover and adapt new knowledge of orbital and deep space.



EMBRIONIX

emSFP-GATEWAY-DMI IP to HDMI Converter

Use Standard HDMI Monitors to Display ST2110 and ST2022 IP Signals

This emSFP-GATEWAY-DMI module, a unique product based on a “SFP” (Small Form-Factor Pluggable), incorporates conversion functionality enabling and simplifying numerous infrastructure systems.

These SFP+ modules can be inserted into 10GE IP switches where it receives IP signals at the host connector to provide HDMI 1.4 on the external connector. Therefore, you can monitor any IP signal throughout your network by simply connecting an HDMI monitor through the module.



Since HDMI cabling restrains you to about 15-meter length, it is also possible to use that same module incorporated inside a miniature emBOX frame, which mounts at the back of a monitor. The emBOX connects to the switch using fiber optic allowing the reach of monitors located kilometers away. The SFP form-factor is a clever and flexible building block resolving adaptation of cable and signal formats and any kinds.

The module can contain encapsulation processing as well as signal validity reporting. The module is reconfigurable to support different encapsulating formats such as ST2022 and ST2110.

The module will automatically adjust to any SDI and HD-SDI resolution contained in the stream. Audio signals are also carried across and provided to the monitor via the HDMI connection.

The emSFP devices follow the industry standards for SFP identification inside host devices, encapsulating

formats and control protocols. This simplifies the integration to any type of systems using various encapsulating formats and any types of COTS 10/25GE IP switches. This means, no specific hardware is required to assure the SFP function. The emSFP-GATEWAY-DMI uses a single SFP cage inside a switch. You can populate a 1RU switch with up to 48 emSFP-GATEWAY-DMI for bulk conversion monitoring installation. This is by far the highest density bulk gateway solution on the market. Competitive solutions require at least two additional rack units of space to be at par with the functionality.

A configuration software allows the setup, monitoring and control of the device. Simple routing of flows can be achieved using an included multi-destination software control panel. An API is provided for other control system vendors such as Lawo and BFE and DNF allowing operators to reuse their existing control surface.

Two alternatives to Embrionix’s solution are currently proposed;

1) *Using professional monitors:* these monitors are only available via few vendors in the industry. They are expensive and only come with pre-determined characteristics and sizes. Embrionix’s simple SFP plug-in solution allows the use of any HDMI display, leaving your selection wide opened.

Moreover, it is an advantage to keep this specialized IP conversion external to your display since IP formats are still in transition.

2) *Using external conversion equipment SDI-to-IP Gateways:* These solutions come under different form factors, typically using extra space inside your equipment rack. We are not aware of gateway converters offering a direct IP-to-HDMI solution, which means an additional SDI-to-HDMI converter is still required in the path. Lots of equipment, lots of cables, many points of failure.

Key Take Away:

- Display agnostic, lets you select any display you want
- Future-proof, format flexible agility
- Zero additional footprint
- Cost-effective solution
- Power-efficient solution

Embrionix’s emSFP-GATEWAY-DMI enables simple, cost-effective IP signal monitoring while not being tied up with specific, expensive monitors or overkill conversion equipment.

www.embrionix.com



ENCO

enCaption3R4 Automated Captioning System

Live Real-Time Automated Captioning System

ENCO continues to advance the possibilities of automated closed-captioning with its enCaption system, the company’s software-defined engine for cost-efficient speech-to-text voice recognition. Now in its fourth generation, enCaption3R4 takes a major step forward with the ability to distinguish between multiple speakers, further reducing the labor of captioning in the broadcast workflow.

Like previous generations, the enCaption 3R4 system needs no re-speaking, voice training, supervision or real-time captioners, thereby eliminating human error.

enCaption3R4 integrates a special algorithm with the intelligence to manage complex captioning situations where multiple subjects are speaking at once. enCaption 3R4 achieves this by isolating each speaker’s microphone throughout the live program. The sophisticated algorithm knows how to manage the captioning of a spirited exchange.

The algorithm does its best to determine who “owns” the conversation — such as the person that started it or who dominates the discussion — and ignores distractions like low voices and brief interruptions. As soon as the conversation shifts to the next speaker, the algorithm immediately and seamlessly transitions to focus on that speaker.

With this new multi-speaker identification feature, hearing-impaired viewers will not only know what is being said, but also who is saying it. Automatic music detection is also built into this release to visually show viewers when music is currently playing on the program.

Both of these features will add to the understanding and enjoyment of the show to ensure a better viewer experience. enCaption is available in real-time mode for live workflows and offline mode for captioning pre-

recorded content.

The appliance can connect directly to a captioning encoder or output many different file formats. ENCO’s enCaption 3R4 is a simple and affordable way to meet the demands of broadcasters by accelerating and refining the closed-captioning process, while minimizing the costs typically associated with closed-captioning services.



ERICSSON TELEVISION LTD.

MediaFirst Video Processing 4K HDR HEVC

Practical End-to-End Live 4K HDR HEVC Encoding and Delivery

Ericsson has developed, and demonstrated at the NAB Show for the first time, a complete end-to-end live 4K Ultra-HD High Dynamic Range High Efficiency Video Coding (HEVC) encoding and decoding solution. The solution consists of a real-time Contribution-quality 4K UHD HDR HEVC encoder, a 4K UHD HDR Integrated Receiver-Decoder (IRD), and a real-time direct-to-consumer 4K UHD HDR HEVC encoder. This is the first real-time industry solution to use a single 3840x2160p raster from the start to the end (as opposed to breaking the 4K image into four quadrants of 1080p HD), which delivers practical high-quality 4K with HDR at economic bandwidths.

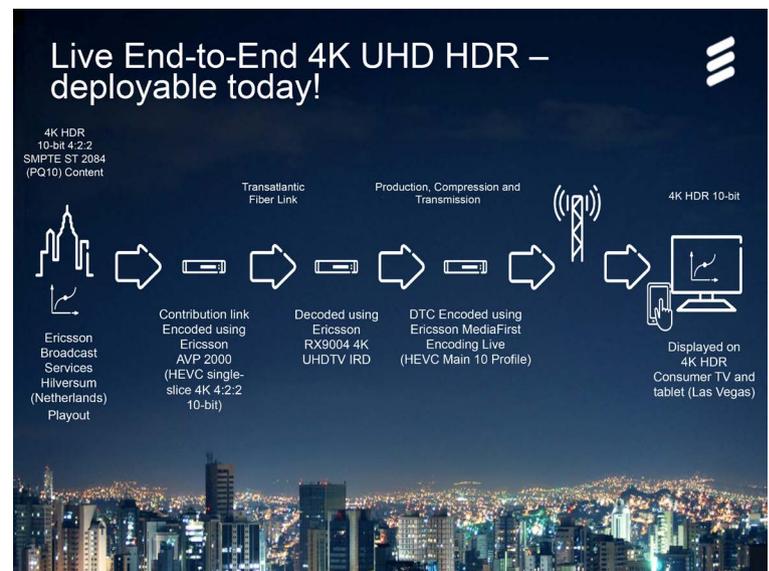
The number of 4K UHD channels is increasing, with a growing interest in adding High Dynamic Range (HDR), Wide Color Gamut (WCG), and 10-bit sample precision (hereafter, all three of these technologies used together are referred to as HDR for simplicity). One of the strongest drivers is 4K UHD live sports and events, with several early services now on air.

Live 4K sports/events place challenging technical demands all along the broadcast chain from the venue to the consumer. High picture quality is vital otherwise the benefit of increasing resolution to 4K is lost. It is especially important to maintain detail. At the same time, the amount of bandwidth used needs to be practical.

Up until now, delivering a live 4K service has been achieved with a “mix and match” of encoders and decoders, often using “four quadrants” techniques: rather than sending a single 4K raster of 2160p, the 4K raster is split into four 1080p services that are sent in-sync, often using AVC encoding rather than the more efficient HEVC encoding. This older solution has two significant drawbacks: it is complex to handle and keep in-sync four signals and relatively high bitrates are needed to avoid seeing the quadrant edges. This latter point is important for operators who plan to add HDR to 4K as (for example) sports or events in low-light conditions may increase the noise in the camera signal, making low bandwidth encoding tricky while maintaining sharpness.

At the start of the solution is the Ericsson AVP 2000 Contribution Encoder, which real-time encodes up to four channels of 4K HDR HEVC 4:2:2 10-bit (up to 2160p60) in a compact low-power, low-heat 1RU chassis, designed for the typical constraints of racks in trucks or studio MCRs. The encoder generates a single raster 4K output via IP, which either can be standard dynamic range or an HDR format (such

as PQ10, HLG10, HDR10, etc.). For Satellite Contribution, a state-of-the-art DVB-S2X modulator may be added (note: this version of the encoder is known as AVP 3000 Voyager).



To receive this Contribution signal, an Ericsson RX9004 4K HEVC IRD is used, which again allows single raster 4K HDR operation. The AVP 2000 / RX9004 combination supports the higher bitrate operation needed on Contribution links, which until now, has been an issue with some solutions.

From there, a single-raster 4K signal is sent to the Ericsson MediaFirst Encoding Live encoder, for the final stage of delivery to the consumer. The latest Ericsson developments allow the 4K or 4K with HDR signals to be packaged up for the correct delivery to the viewer and also to be repurposed for HD or 4K SDR delivery, including packaging conversion for multiscreen applications.

All put together, this solution represents an industry first – a complete, workable end-to-end solution for the delivery of live 4K HDR services.

www.ericsson.com/ourportfolio/products/television-and-video

ERICSSON TELEVISION LTD.

MediaFirst Video Processing Portfolio

Industry-Leading Cloud-Based, Software-Defined Content Processing Solution

Ericsson MediaFirst Video Processing is a robust suite of applications for delivery of encoded video and audio content to the consumer. It is the most advanced cloud-based and software-defined content processing solution in the industry.

New for the 2017 NAB Show was a completely refactored micro-services architecture, the first media processing platform in the industry to be re-architected in this way. Fully containerized to enable cloud deployments, the design removes any dependence on expensive tools and enables the use of open source components. This, in turn, enables customers the flexibility to scale in the most efficient manner that best fits their needs, whether deploying the applications on dedicated appliances in a headend or in private or public clouds.

Ericsson MediaFirst Video Processing provides best-in-class video processing, leveraging the world's most advanced algorithms and functions to deliver the ultimate picture quality while achieving the most efficient bandwidth usage. With more than 25 years of world-leading video compression expertise combined with the industry's most comprehensive media processing virtualization capabilities, Ericsson MediaFirst Video Processing provides a single, comprehensive application-based suite that addresses every stage of the media delivery chain, including live video processing, content preparation and content monetization (such as localization and dynamic ad insertion). A consistent management interface is utilized for all video processing applications, and robust APIs for integration with in-house or 3PP systems help streamline usage. Ericsson MediaFirst Video Processing Management takes control beyond traditional Network Management Systems, often restricted by the physical system routing. It takes it to a level of control that ensures operations such as redundancy and license management are seamless, while maintaining and providing the abstraction of service needed to be able to view an entire media processing system and reduce complexity and costs for the operational teams. This all operates alongside open source deployment tools needed to be able to scale up and down the processing available for the end-to-end ecosystem.

Efficient video delivery is the foundation of a complete service offering that meets the needs of any market. As video delivery requirements grow in complexity, Ericsson can help content owners, broadcasters and TV service providers streamline delivery of any content type to any device.

Understanding what to virtualize and how to ensure leading compression performance, which is still fundamental, is key regardless of deployment type. Ericsson focusses on maintaining compression performance, leveraging the best algorithms on x86 technologies as well as accelerating those processes with hardware where needed. The addition of software stream processing and packaging into this architecture completes the processing and provides functions for additional services such as content localization and advertising.

Live End-to-End 4K UHD HDR solution products

AVP 2000 Contribution Encoder

RX9004 4K UHD TV Receiver

Ericsson MediaFirst Encoding Live

Consumers have an insatiable appetite for high-quality video content that's accessible from any device. But behind the scenes, content owners, TV service providers and broadcasters are seeing networks stretched thin as they race to serve up more HD than ever. With heavy UHD and even 360 Video/VR demands looming, the need to focus on video processing is becoming increasingly important. Whether launching a new service for the first time or targeting multiscreen viewing with the highest quality and efficiency, Ericsson MediaFirst Video Processing can help make the best use of network resources.

www.ericsson.com/ourportfolio/products/mediafirst-video-processing?nav=productcategory007

EVERTZ MICROSYSTEMS LTD.

evREMOTE and 3606FR IP Transport Platforms

At-Home Production Eliminates Need for an Entire Mobile Production Solution

Remote production is an intensive and cost-heavy endeavour for broadcasters. Costs of onsite staff, travel, setup time and expensive additional equipment must be accounted for. It is a complex decision to make and often means broadcasters can only justify covering the largest and most lucrative events.

The transition to IP brings new enhancements to the practice of remote production. Signals defined in the broadcast domain can be transported to offsite studios for recording, editing, production, play-out and distribution. This allows more flexible usage of personnel and requires less equipment on-site, giving broadcasters greater flexibility in the events they cover.

At the 2017 NAB Show Evertz introduced two new transport platforms: evREMOTE and 3606FR. These products allow for simple and quick deployment of remote production capability for venues.

evREMOTE: Smart Remote-at-Home Production

The evR provides 120Gbps switching capability along with up to 12 JPEG2000 encoders and decoders plus support for a comprehensive range of signal types seen in At-Home remote production including MADI/GPIO/Serial Data and Ethernet. In addition to its signal aggregation duties, evRemote features dual 10G redundant links with integrated link testing for enhanced reliability, an optional integrated multiviewer for simple on-site monitoring, and an integrated test signal generator.

At-Home production's advanced capabilities eliminate the need for an entire mobile production solution, including a mobile truck with production switcher, recording/replay system, graphics system, satellite or microwave transmission system, onsite. Additionally, the elimination of this onsite hardware minimizes event leasing and production staffing costs associated with overtime, per-diem, mileage, and hotel charges. Co-locating at a centralized site provides the flexibility to cover multiple events in a day rather than tying up an entire crew and truck for several days.

3606: Ultra High Density Transport Platform

The 3606 enables simultaneous dark fiber and IP transport and is

signal agnostic for the full range of video, audio, and data signals seen in the broadcast/remote production environment, including 12G/3G/HD/SD-SDI video, ASI, DS3, 10/100/1000/10G Ethernet, AES and MADI audio, HDMI, Intercom and Serial Data over dark fiber or IP infrastructures.



The 3606 also provides flexible routing between inputs and outputs with a built-in 80x80 12G-SDI router, and effectively replaces multiple pieces of mobile equipment all in 1RU. When multiple units are combined, the transport platform becomes ultra scalable to define point to point, ring and hub & spoke configurations enabling the sharing of content from different venues using different transport media.

The 3606 is a highly customizable multiframe where signal requirements can be aggregated and converged for the task at hand. The 3606 combines flexible routing technology of signals up to 12Gbps video with IP transport over 10Gbps, 40Gbps (25Gbps, and 100Gbps in development) main and redundant trunks in addition to dark fiber.

The evR and 3606 leverage the highly effective Evertz control and monitoring software suites — MAGNUM, VUE, VistaLINK Pro, SDVN and inSITE — providing a one vendor solution. SMPTE 2022 IP Encapsulation is supported on both platforms, as will ASPEN and the SMPTE ST 2110-n family of video over IP standards.

Evertz At-Home remote production solutions allow for major cost savings by reducing footprint, setup time, staffing and travel costs, power consumption and by ensuring reusability and agility of equipment in a multitude of roles. The 3606FR and evREMOTE are perfect solutions for remote/at-home production in a compact yet dense form factor. They are designed specifically to accommodate a myriad of transport scenarios today and in the future.



EVERTZ MICROSYSTEMS LTD.

DC-LIVE-EDIT Video/Audio Editing Tool

Instant Craft Editing Capabilities With Render-Free Publishing

The varied and constantly evolving operational workflows associated with modern live sporting and entertainment production events is placing heavy demands on Broadcasters. As a result, Broadcasters are demanding more flexible production tools that address the realities of today's production environment.

DreamCatcher is an advanced IP based hardware platform that combines the functionality of several typically discrete live production tools including non-linear editing (NLE), transcoding engines, logging devices, graphic overlays, zooming and tracking tools and integrates them into a single hardware solution. This IP-based platform, by leveraging its high bandwidth network architecture, can scale to meet the needs of any production workflow.

Dream catcher can be used for a variety of production applications including remote access of content, At-Home remote production, capture and playout over IP, 4K-UHD/HDR, high frame rate camera support, craft editing, real time transcoding of growing files and 8K capture and replay. The software defined data center (SDDC) architecture provides a flexible IP-based design capable of quickly adapting to the constantly shifting requirements of the modern broadcast facility.

Evertz introduced a new DreamCatcher tool, DC-LIVE-Edit at the NAB Show. DC-LIVE-EDIT is an advanced full featured non-linear editing tool that allows for instant craft editing capabilities with render-free publishing. The DreamCatcher Live Edit software package features advanced non-linear editing capabilities

with an intuitive interface with the added capability of being integrated directly into the DreamCatcher live production environment.

DC-Live-Edit's advanced design enables immediate access to live content from the production record train (IP transport streams). This enables DC-Live-Edit to offer several opera-

tional benefits. These include advanced features like ANGLE-AWARE and RENDER-FREE.

Also live stream access eliminates the need to create duplicate growing files, full access to logging data and meta-data from the live record train and minimizing transcoding activities.

The DC-LIVE-EDIT software provides instant craft-editing capabilities without the need to transfer content to an edit station. The integrated live editor also reduces render times to zero by accessing live content directly using Dreamcatcher's RENDER-FREE engine, which enables fully edited packages to be played out with zero render time. This revolutionary feature enables the fastest possible operational workflow possible in a live environment greatly increasing efficiency and flexibility.

By utilizing the DreamCatcher system's distributed 10GigE network and integrated transcoding engine, the DC-LIVE-EDIT will provide immediate access to any piece of content live or archived. In addition, the integrated live environment is ANGLE-AWARE whereby once edits are completed the operator can simply select the video segment and swap to any alternate angle of the content with edits in place greatly increasing editing speed and flexibility, which is critical in a live production environment.

In addition, minimizing setup time for new operators is critical in a live production environment in order to both minimize costs and minimize downtime. To accommodate freelance editing staff and minimize familiarization with new interfaces, custom keyboard shortcuts and an intuitive touch interface provide a tool that any craft editor can master immediately.

The DC-LIVE-EDIT with its advanced editing tools, enables the instantaneous creation of high quality content in a fast paced live production environment while simultaneously improving operational workflows and reducing costs with its integrated feature set. No other system combines best attributes of a traditional nonlinear editor with the immediacy of the live production environment.



www.evertz.com/solutions/dreamcatcher

EVERTZ MICROSYSTEMS LTD.

Mediator-X Cloud Playout Reinvented

Lower Capital Expenditures and Decrease Time to Market and Time to Revenue

Evertz’ cloud-based playout and nonlinear content delivery solution is ideally suited to lower capital expenditures and reduce cost of ownership for media companies while making new revenue opportunities accessible. Evertz’ innovative approach, leveraging public cloud, private cloud and hybrid architectures, gives media companies the agility and flexibility to dynamically scale their operations and spin-up and spin-down resources, decreasing time to market and time to revenue.

Amazon Web Services (AWS) is a cloud based computing platform specializing in on-demand computing services. Evertz’ AWS playout solution, the media industry’s first large scale public cloud playout solution utilizing AWS, is meeting the critical playout requirements of broadcasters globally. Evertz’ AWS playout solution reduces fixed infrastructure costs, including HVAC, leasing and facility maintenance costs associated with on-premise infrastructures. Public cloud playout also gives additional options for linear content delivery, potentially replacing traditional satellite transponder links with IP connections. Other benefits of the public cloud architecture include control and monitoring of all remote facilities from a single point.

The core component of Evertz’ cloud playout solution is the Mediator-X Media Asset Management System (MAM). Mediator X is a software platform used to manage, deliver and automate all component elements of linear and nonlinear content distribution workflows.

Mediator-X has been designed to leverage the inherent benefits of virtualization including the ability to spin-up and spin-down platform components to meet workload demands.

For linear playout applications, Mediator-X manages the configuration of new channels to be launched in the public cloud environment directly from the Mediator-X configuration tool; allowing a traditional engineer to launch a channel without needing to know the depths of AWS. Full back-end integration with the AWS S3 storage layer allows Mediator-X to manage all asset movements, from ingest to playout, and

provides tracking across multiple regions and storage tiers.

This includes end-to-end component asset support, where master assets can be held as a discrete set of components (video, audio, captions/subtitles) and all transfer, transcode and playout operations can operate on these components natively. Furthermore, transmission version

‘recipies’ can be created at a metadata level, this maintains consistent interfaces to upstream and downstream systems without the overhead of creating new physical files for playout/distribution, especially crucial in the cloud model when every byte of storage is chargeable.

Deploying new channels can now be done in a matter of minutes, rather than the months it used to take. Mediator-X is the key component of Evertz’ cloud-based playout solution and enables several user benefits:

- **Agility** — Deploy new channels quickly, in minutes rather than months
- **Flexibility** - Minimizing on-premise hardware, enabling fast, cost-effective expansion
- **Scalability** — Spin-up and spin-down resources as required by demand.
- **Reliability** — Leveraging public cloud infrastructure enables more options for



system resiliency

Evertz’ AWS playout solution harnesses the massive scalability of AWS and optimizes resources by dynamically scaling the amount of necessary computing resources available based on current load. As media companies spin-up new channels, AWS resources can be scaled-up and as channels are spun-down, resources can be released. This ensures the availability of resources while eliminating idle equipment. Also, the reliability and redundancy of AWS coupled with proper engineering of system resiliency of the AWS infrastructure ensures reliable on-air operations.

Evertz’ innovative approach, which leverages public cloud, private cloud and hybrid architectures, gives media companies the agility and flexibility to dynamically scale their operations and rapidly spin up and spin down channels decreasing both time to market and time to revenue.

www.evertz.com/solutions/mediator-x

FLANDERS SCIENTIFIC INC.

BoxIO 12G

Real-Time 3D and 1D LUT Updates for 4K/UHD/HDR Signals Over 12 Gbps SDI

BoxIO 12G is an advanced color management device supporting real-time 1D and 3D LUT updates for use with 4K, UHD and HDR signals. Real-time LUT update support allows BoxIO 12G to be used with many on-set look management solutions including Pomfort's LiveGrade Pro, Filmlight's Prelight and FireFly Cinema's FirePlay for real-time look creation, preview and management.

12 Gbps SDI connectivity ensures compatibility with today's most advanced signal formats including 4K, UHD, and HDR sources. BoxIO is equipped with four independent SDI inputs and outputs as well as a 4K HDMI compatible output. Four separate HD-SDI signals or two separate 4K signals can be managed at the same time from a single BoxIO 12G device. BoxIO 12G features clean loop throughs for every SDI input ensuring that BoxIO does not have to be positioned exclusively as an end of chain device, a capability missing from the vast majority of LUT boxes on the market.

BoxIO 12G is also integrated with leading calibration solutions from LightIllusion and SpectraCal for direct test pattern generation and LUT upload. This enables fast, simple and accurate calibration of practically any display.

BoxIO 12G can also utilize Flanders Scientific's

BoxIO Utility and ScopeStream applications for Windows or Macintosh computers. BoxIO 12G, like other BoxIO models, is controllable over IP using the BoxIO Utility allowing an almost unlimited number of BoxIO devices to be managed from a single computer on the same network. The BoxIO Utility also allows full resolution frame capture and recall. With ScopeStream, the BoxIO transmits real-time waveform and vector scope data over IP to be displayed on a connected computer.

The ability to use 1D and 3D LUTs at the same time provides an additional layer of accuracy and flexibility often missing from other LUT capable devices. 1D LUT support can be particularly useful in HDR workflows and other applications employing complex electro-optical transfer functions. BoxIO was designed with these sophisticated types of scenarios in mind, making the BoxIO 12G the most state of the art LUT box in the industry.



FLANDERS SCIENTIFIC INC.

DM240 Color Critical Production Monitor

Advanced Features Minimize Additional On-Set Equipment Requirements

The DM240 from Flanders Scientific is the latest in a long line of highly regarded color critical production monitors. The DM240 is durable, lightweight and power-efficient with enough screen real estate to make it equally at home in the color suite and on-set. The DM240 is equipped with the same advanced features and capabilities as the flagship DM250, but utilizes a native HD 10bit LCD panel with a wide color gamut covering 100 percent of the DCI P3 color space and features an outstanding real-world contrast ratio of 1500:1. The DM240 features 12-bit 3 Gbps SDI inputs and is equipped with Flanders Scientific's advanced third generation color fidelity engine which supports both 3D calibration and 3D DIT/Look LUTs.

Industry leading fast mode processing, Real-Time Scopes with HDR waveform, HDR preview modes, a strong all-metal chassis and direct integration with today's most powerful color management tools make the DM240 a production environment workhorse for applications where color really matters.

The DM240 features 18 different scopes and meters, an adjustable exposure check tool, advanced pixel level measurement capabilities, live side-by-side monitoring, the ability to upload and store up to 16 3D DIT LUTs, a video data analyzer, loud-

ness meter and CIE scope. Additional capabilities include anamorphic de-squeeze functionality for 1.3x, 2.0x, 1.3xMag, and 2.0xMag de-squeeze ratios, a variety of zoom modes, pixel mapping for non-native HD signals, markers, timecode, focus assist and log monitoring modes.

The DM240 can also utilize Flanders Scientific's IP Remote Utility and ScopeStream applications for Windows or Macintosh computers. The IP Remote Utility allows for IP remote control of the connected monitor as well as full resolution frame grab and recall. With ScopeStream, the DM240 transmits real-time waveform or vector scope data over IP so that they can be viewed on a connected computer leaving the reference monitor's screen unimpeded.

The DM240 also offers direct integration with on-set color management solutions like Pomfort's LiveGradePro, Filmlight's Prelight, Firefly Cinema's Fireplay and QTAKE's Grade module allowing for on-set color grading without the need for a standalone LUT box. The monitor features dedicated second screen outputs for distributing manipulated images to downstream equipment, a true Zero-Delay processing mode and signal cross-conversion making the DM240 the most state of the art 24-inch monitors in the industry.



flandersscientific.com/DM240/

FLUOTEC

CineLight Studio Long Throw LED PANELS

Output Tunable Range Between 2700K–6800K, DMX LED PANELS for Studios

CineLight Studio™

An affordable high-quality, tunable pure white light long throw luminaires specially designed for high rise television and motion pictures studios.

Key Features

- Reflector louver concentrator with medium diffusion Nebula™ chamber and panel
- Concentrated Long Throw light beam for use in high rise television and motion pictures studios
- Pure white light with high TLCI and CRI Indexes
- Tunable Constant Output with a CCT range between 2700K-6800K
- AC Powercon 2 addressable DMX channel LED PANELS for studio lighting
- Available in three sized 1-foot, 2-foot and 4-foot length with yoke

The new CineLight Studio™ line is one of the most advanced long throw LED PANEL lighting system of the world, it features new reflector louvers that concentrate the light to reach more distance, it also has FLUOTEC's exclusive technologies: NEBULA® Diffusion Chamber Technology and the advanced DMX HALODIM® constant output stepless 0-100 percent dimming. The rapidly changing workflows in television have changed from standard definition to the new HDR, 2K, 4K and 8K professional imaging.

Great lighting and exposure control are the name of the game for television and motion pictures stages and studios. On one side, new cameras have higher resolutions and better low light capture abilities, but the extended HDR and new television color spaces need better quality of lighting.

Today the CineLight Studio lights deliver the best broadcast quality light and their improved efficiency make the inefficient incandescent lighting an obsolete technology. FLUOTEC's CineLight Studio™ System is a powerful new family of tunable long throw full output LED PANELS for high-rise studio lighting.

They are the result of FLUOTEC's 20-year world class, award-winning design and development process.



They deliver a beautiful soft Hollywood style light output that really packs a punch.

For example, the model 120 consumes only 266 watts. Yet, it is so powerful that its light output is roughly equal to a traditional 2K watt tungsten soft light that consumes approximately 10 times as much electricity.

The power efficiency of LED lighting adds up in multi-fixture studio settings, and its value is further enhanced when you consider how much less heat LEDs

generate than their tungsten ancestors.

Less studio heat also means less air conditioning expense. CineLight Studio™ luminaires soon pay for themselves in studio electrical cost savings.

They are air-convection cooled, without noisy fans that can intrude into microphones & audio mixes, especially when using multiple fixtures in a studio setting.

While all that will keep the accountants happy, it's the quality of the light and its ease of use that is making them so popular with television lighting designers, gaffers, producers, directors & cameramen.

CineLight's Tunable temperature ranges from a warm 2700K, to a cool 6500K (K = degrees Kelvin). Their full color range is ideal for HDR, 4K and 8K Television and Digital Cinema Studios.

The CineLight Studio™ system has better CRI and TLCI ratings than its competitors.

You may manually set your color temperature level on the unit, choose one of the user-set color temperature presets, or connect via DMX console, where you have separate channel control of the luminous power and color temperatures balance. FLUOTEC's proprietary Halodim™ calibration curve software does the important work of keeping the CineLight Studio's brightness output constant, even as you change color temperature.

You can set your light output levels first, and then decide the separate creative issues of color temperature, without worry that you are adding or losing footcandles.

flutec.net/cinelight.htm

FLUOTEC

VEGALUX 300™ 12” Tunable LED Fresnel

Powerful 12-Inch 300W Motorized Zoom DMX StudioLED Fresnel

VEGALUX 300™ StudioLED Fresnel, the Big 2K DMX TUNABLE Motorized Zoom 12-inch StudioLED Fresnel, by FLUOTEC # G6LED126

The VEGALUX 300™ is part of FLUOTEC’s design, engineering and manufacturing efforts to replace inefficient traditional Fresnels with powerful LED versions with unprecedented DMX control.

Fresnels are the workhorses of studio and production lighting, their flood to spot capability makes them the ideal lighting fixtures and the VEGALUX 300™ has the most usable beam angle from 15–50 degrees.

Television studios, rental and production companies need to substitute their old inefficient tungsten lights, and the VEGALUX 300™ is the ideal fixture because it can be easily interchanged with old standard Fresnels.

The VEGALUX 300™ adds tunable color temperature capability to FLUOTEC’s dedicated CCT tungsten and daylight lineup of Studio Lighting LED Fresnels 100 percent boost in power output over last year’s NAB Best of Show finalist the VEGALUX 200™, increasing the light’s tungsten equivalency from 1,000W to 2,000W. 4071.95 Lumen /2101 fc at 4400k, 6 feet 15o degree spot angle.

The VEGALUX 300™ is a fully tunable pure neutral white light source, at 4400K you have an impressive 2K double output of pure neutral white light making the VEGALUX 300™ the ideal FRESNEL light for all kind of lightings situations great for talent skin tones and the faithful reproduction of clothing and stages, allowing you creative production choices. You get a full range of pure white light from a warm 3200K all the way to cool white 5800K.

The VEGALUX 300™ StudioLED Fresnel includes: eight leaf Barndoors, two Safety Cables, a studio C-Clamp and a long 16-foot Powercon cable. It also includes a stand mount spigot for use on location and sports a sturdy yoke for use in studio lighting grids. With the on-board control or via DMX you can easily change all the functions,

intensity, variable beam zoom angle and the CCT color temperature, an ideal feature for broadcast studios. The quiet cooling system allows the use on location or stage sets

The VEGALUX 300™’s 2,000W tungsten equivalent output draws only 330W in operation, making possible savings of a 75–80 percent over similar output tungsten lights. You can actually run 5 VEGALUX 300’s 2.81A

(338W) @120V from a 20A, 120VAC outlet as opposed to two 1,000W or three 650W standard fixtures. The new digital LED technology will also save labor costs because there is no need to use CCT filters or scrims in high places. Besides the labor and lamp change savings this cool fixtures feature very low heat emission also meaning lower air conditioning costs in the studio.



Highlights & Value-Added Benefits

- FRESNEL Microprism Lens 12-inch DMX Dimmable Motorized Zoom Beam Angle 15–50 degrees spot-to-flood adjustment.
- On-board Control and DMX Digital Dimmer with HALODIM® 0–100 percent Stepless CCT and Dimming Technology.
- Powerful LED engine 2K equivalent with only 338W electrical draw.
- Operation Voltage: 90–240V — 50/60 Hz.
- TUNABLE Pure NEUTRAL White LIGHT High CRI >93 color rendering index
- 3,000K - 5800K, Variable CCT Gamut with exclusive NEBULA® Diffusion Chamber Technology for a beautiful high CRI and TLCI*
- The VEGALUX 300™ (2K Tungsten equivalent) is 100-percent brighter than the VEGALUX 200 at 4400K and is fully DMX CCT tunable from 3000K–5800K
- Quiet Fan mode selection
- Available in professional black

Photo metrics

Impressive lumen output 75,752 lux / 7038 fc @ Neutral White 4400K Spot 15°: @ 3.3’ (1.0 m)



FLUOTEC

STARMAKER IP65 Weather-Proof LED PANEL

Tunable Pure Neutral White Light LED PANEL All-Terrain Water & Dust-Proof

The Starmaker is a tunable pure neutral white light, an All-Terrain-Weather: water & dust proof lighting fixture with an amazing certified IP65 ingress protection rating. It can be used in full sand or dust storms, as well as full rain storms from all angles. The StarMaker® IP65 is a production-LED PANEL with a tunable pure neutral white light CCT Range: 2800K–6500K, able to run off both AC and DC battery power with a high certified >94 CRI and TLCI indexes for accurate rendering of colors, it is a portable, low weight (10.6 pounds) very rugged all metal construction system, not a



plastic fragile fixture. This makes it perfect for news crews working in all types of weather, including those challenging live TV shots taken during raging storms. Its body is sealed and fully protected against the elements, and ideal lighting tool for today's extreme Production Lighting, a very affordable system also for rental companies because it includes AB Gold or V Lock Mounts for battery operation that eliminates the need for extensive cabling in rushed situations used in: broadcast, motion pictures, schools, universities, digital cinema, video and photography. Its tunable ability allows custom lighting to match a location ambience, which can often be a color temperature mixture of tungsten, fluorescent and window light.

You can also vary the light's color temperature CCT from that of the ambient location, to contrast the subject more against the background, helping create a visual sense of tri-dimensional depth, or even resolve

cosmetic issues such as warming up a pale skin tone. Its impressive beam quality delivers smooth even output, that bathes your subject in a beautiful soft neutral pure white light, without the multi-shadow artifacts of lesser LED fixtures.

Whether you are lighting a dramatic feature film or doing a live location news feed, your talent will look great. It is also the perfect choice for constant source lighting in still photo shoots, either in studio or on location. The Starmaker™, designed and manufactured by FLUOTEC, now delivers an impressive 111 fc output at 6 feet. Twice the light output at more than half the price of competitive fixtures, it has a very efficient passive cooling 100 percent silent operation, a totally integrated and weatherized fixture that does not need any external attachments or expensive optional accessories, it is a ready to use lighting solution right from the box.

- Tunable Pure Neutral White Light CCT Color Temperature Range: 2800K-6500K with a High Quality CRI & TLCI index: >94
- IP65 Certified Ingress Protection Rating ensures performance outdoors and on location with protection against dust or water entering the fixture.
- Included either Anton Bauer Gold or V-Lock mount for battery operation
- Beam Angle: 45 degrees
- 5800–6000 lumens in LED power while only drawing 80W of power
- 0–100 percent Stepless HALODIM™ technology for no CCT color shift while dimming
- Fanless Operation totally silent operation
- Powercon Bridging
- Universal 90–240V-50/60Hz .67A (80W) @120V Internal Power Supply and AB Gold or V-Mount for Battery Operation
- Filter Gel Frame Holder and 5/8-inch Stand Fitting included
- Flight Portable Dimensions 16.00 x 12.25 x 4.75 inches (40.6 x 31.0 x 12.0 cm)
- With Stand Fitting: 16.00 x 16.25 x 4.75 inches (40.6 x 41.3 x 12.0 cm)
- Low Weight 10.5 pounds (4.8 kg)
- Package Weight 15.05 pounds
- Box Dimensions (LxWxH) 19.4 x 18.9 x 6.8 inches
- Available SoftBOX Studio accessories for soft lighting

GATESAIR

ULXTE Liquid-Cooled Transmitter

IP-Native UHF Transmitter Range Optimized for Spectrum Repack and ATSC 3.0

The new GatesAir Maxiva ULXTE liquid-cooled solid-state UHF transmitter expands the company's industry-first transmitter range with native IP capability at the 2017 NAB Show, and also integrates a centralized control interface and enhanced signal correction software for superior system performance. The ULXTE brings instant adaptability and enhanced flexibility to the broadcast industry's latest over-the-air DTV standards (ATSC, DVB-T/T2, ISDB-Tb), which benefit from the flexibility of IP networking and connectivity. Likewise, its software-defined modulation allows seamless migration to future digital TV standards worldwide, including the emerging ATSC 3.0 modulation.

The ULXTE is also optimized for channel changes driven by the Spectrum Repack, thanks to next-generation power amplifiers that increase peak power capacity for all ATSC and OFDM waveforms. This design strategy, based on GatesAir's PowerSmart® Plus architecture with broadband amplification, accelerates manufacturing and delivery by simplifying channel tuning across the spectrum; and increases power density for all modulations. Its high-efficiency power amplifiers and market-leading power density also provides equal power levels for ATSC 1.0 and 3.0, and reduces costs, energy consumption and internal parts to streamline maintenance. In fact, the slimmed-down architecture, reducing footprint and weight, makes single-engineer maintenance a reality—and an ongoing OPEX benefit—for networks and broadcasters with limited RF engineering resources.

To enable native IP capability, the Maxiva ULXTE directly integrates GatesAir's latest high-performance modulator from the recently-released Maxiva XTE exciter into its architecture. This eliminates the need to retrofit previous-generation Maxiva liquid-cooled transmitters with additional gear to enable network connectivity, giving broadcasters an out-of-the-box solution to simplify the input and output of multimedia services via a local- or wide-area IP network.

The XTE technology also ensures a clear path to ATSC 3.0. Featuring



a software-defined modulator, the XTE includes native IP inputs and eliminates the need to retrofit transmitters with additional gear to enable network connectivity, giving broadcasters an out-of-the-box solution to simplify the input and output of multimedia services via a local- or wide-area IP network. The design provides a direct gateway to the enhanced multichannel DTV, mobile broadcast and streaming opportunities of ATSC 3.0, and centralizes advanced IP-based monitoring and control to a single user interface. The ULXTE is also easily adaptable to single-frequency network (SFN) architectures that are expected to become common in ATSC 3.0 deployments.

Beyond the Spectrum Repack and ATSC 3.0, the ULXTE instantly adapts to global DTV standards, with seamless migration to DVB-T, DVB-T2 and ISDB-T thanks to the software-defined modulation of the XTE. The XTE-driven modulation further reduces costs and power consumption by lowering wattage requirements at the amplification stage, without affecting the same signal strength. Its inherent GatesAir RTAC™ (real-time adaptive correction) software also strengthens signal correction at the amplification stage to optimize performance and regulatory compliance.

To obtain maximum efficiency, the liquid-cooled design integrates low-noise pump modules within the transmitter to further reduce its already compact footprint. Two fully redundant cooling pumps operate in a closed-loop design, with auto-changeover capability in the event of a failure to ensure proper and constant transmitter cooling. The associated size and weight improvements are especially helpful for broadcasters who lease space in the RF plant by the square foot. For example, the ULXTE provides a foot print reduction of over 50 percent—a remarkable difference in monthly rental costs.

The ULXTE is available in power levels from 1.2kW to 150kW on all modulations, and offers industry-leading system efficiency levels up to 45 percent.

www.gatesair.com/products/transmit-tv/uhf-transmitters

GATESAIR

Maxiva VAXTE Air-Cooled Transmitter

Accelerates Channel Relocation for Low-Band and High-Band VHF Spectrum

GatesAir has taken the lead in helping broadcasters seamlessly move to new VHF channel assignments during the TV spectrum repack with the Maxiva VAXTE, a new air-cooled transmitter series that covers the entire VHF spectrum. While GatesAir takes the RF performance and low total cost of ownership crown for Band III (Channels 7–13) with the VAXTE, the new high-efficiency series also fills a clear industry void for low-band VHF (Channels 2–6).

Based on GatesAir's PowerSmart® Plus architecture with broadband amplification, the VAXTE accelerates delivery by simplifying channel tuning across the VHF spectrum. The PowerSmart Plus architecture also slims down footprint and weight through its exceptionally high power density. This efficiency gains are made possible through newly available, next-generation LDMOS power amplifiers that additionally further reduce power consumption and transmitter footprint.

The VAXTE series is built on GatesAir's latest high-efficiency power amplifiers, which increase peak power capacity for all ATSC and OFDM waveforms. Its high-efficiency power amplifiers and market-leading power density also provide equal power levels for ATSC 1.0 and 3.0, and reduce costs, energy consumption and internal parts to streamline maintenance.

The Maxiva VAXTE incorporates GatesAir's state-of-the-art XTE exciter, which provides a clear path to



ATSC 3.0 thanks to a software-defined modulator and native IP inputs. These same design attributes, along with its high- and low-band designs, make the VAXTE an ideal solution for broadcasters impacted by the U.S. repack. IP-based monitoring and control further simplifies oversight of all signal performance and transmitter parameters across TV networks of any size, including single-frequency networks (SFNs). GatesAir RTAC™ (real-time adaptive correction) software employs market-leading digital signal correction at the amplification stage to optimize signal performance and regulatory compliance.

Since there are so few reliable VHF options on the market (especially for low-band), the VAXTE solves the problem for many over-the-air broadcasters expected to move to new VHF channels from UHF, or other channels on the VHF band, as a result of repack. In addition to its market-leading performance and efficiency for broadcasters that need a VHF repack solution today, the VAXTE provides a clear path to the emerging revenue opportunities associated with ATSC 3.0 thanks to its intrinsic IP capabilities. These include mobile DTV and media streaming opportunities that are anticipated with the move to ATSC 3.0

The Maxiva VAXTE is available in power levels from 100W to 26kW in ATSC 1.0 and 3.0, and offers industry-leading system efficiency levels up to 50 percent.

www.gatesair.com/products/transmit-tv/vhf-transmitters

GEARHOUSE BROADCAST

Columbus Mobile Broadcast Unit

First North American Mobile Unit Specially Designed for 4K/UHD Sports

The unique features of Gearhouse Broadcast's newest addition to its fleet make it a first of its kind in North America.

Columbus is a mobile broadcast unit specifically designed, built, integrated and finished to the highest industry standards for 4K/UHD sports and entertainment productions.

It is the only IP-ready, U.S.-based truck offering native 4K workflow with an all-4K monitor wall. Other unique attributes of the unit include one-button, remote-controlled hydraulic deployment; integrated RF communications (50-foot mast included); a virtual management system to control complex signal flow; and a second control room for digital streaming, additional languages and IMAG.

Columbus was built by renowned specialist coachbuilder A Smith of Great Bentley (ASGB Ltd.), per the design and under the oversight of Gearhouse's System Integrations team. Gearhouse also enlisted the input of U.S. operational crew to ensure it would create a familiar environment for end users. They can access equipment easily and ergonomically. And "underneath the hood" is a powerful processing and system management infrastructure that ties everything together seamlessly.

The main control room of Columbus consists of 24 Boland 4K monitors that also handle HDR content. This eliminates the need to down convert, which can introduce latency.

Columbus' second control room was designed specifically for digital streaming, additional languages and IMAG. This allows the entire production team to work together in one truck. There is no need for outsourcing communications to a third-party vendor, or an additional tent or container nearby that requires extra cabling, to support another control room.

Furthermore, Columbus's hydraulic deployment system saves time. With a remote control, Columbus' expando, legs and floor are extended, automatically levelled and the truck is show ready without physical intervention. This allows the unit to be deployed 30-40 minutes faster than manually hand-cranked trucks. Clients also save on crew costs usually incurred by extra time needed to pop out the expando using traditional methods.

With Columbus, Gearhouse Broadcast has taken their global experience and married it with current and future U.S. production needs to design a mobile unit that provides maximum flexibility for clients, directors, producers and engineers alike. The master control system (VSM)

gives the crew maximum control, with Wi-Fi tablets available to manage and assign sources and monitoring in the various operational areas, including the monitor wall. This facilitates the initial set-up of the unit for production and allows the team to very easily make changes during mission-critical live broadcasts rather than having to re-route video, audio and control features independently.



Columbus takes a lot of the legwork out of last-minute changes, reducing stress on an already focused crew. Its spacious layout features adjustable monitors in the main control room, custom air conditioning that is both efficient and quiet, and changeable color levels and schemes to appeal to a wide variety of preferences. It's also made of composite material, so the truck itself weighs less, allowing for additional bulk storage or other equipment needs on board versus commissioning a second truck.

No technological advancement or physical convenience was spared when building Columbus. It can work in multiple environments and perform complex broadcast coverage with ease. An incredible pool of design and engineering acumen has been brought to bear on Columbus, elevating the "wow" factor of location production for sports, concerts, awards shows and live events in the United States, and Canada.

www.gearhousebroadcast.com/columbus

GLOOKAST TECHNOLOGY

Glooport media|producer — Ingest Platform

MP Is the Only Distributed, Cloud-Ready, Multi-User Ingest for AVID

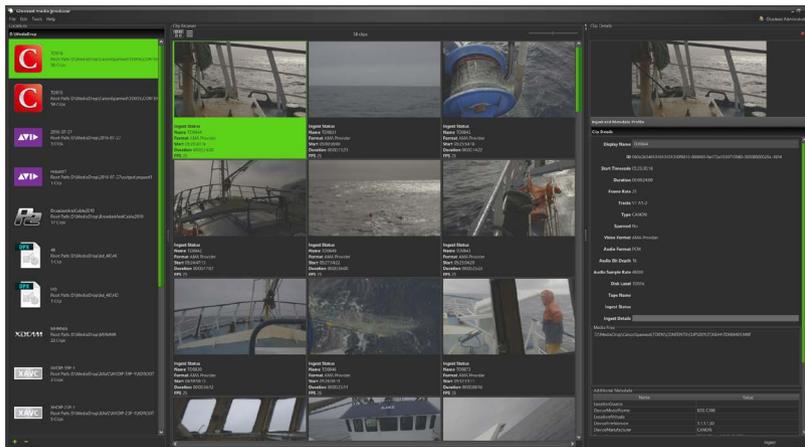
GLOOKAST media|producer is a fully distributed and virtualizable, load-balanced, cloud-ready, true multi-user, media and metadata ingest platform for production environments.

It is the newest member of the Glooport family of products which also includes: media|parker, media|retriever, media|transform and media|connect.

- o Services can be hosted on-premise, on the cloud, or in hybrid cloud environments
- o All client/cluster communications are secure and encrypted

Features:

- Multi AVID interplay authentication and automatic project-based ingest template creation
- Truly multi-user system with individual profiles and session settings • Automatic file source and type detection – user is not required to have any technical knowledge of file types and formats
- Easy and flexible clip grouping with marker (locator) support to identify source clip boundaries
- Metadata profiles to enforce required metadata input in clips
- Flexible metadata handling, creation and editing
- Full metadata support for standard file structures
- True multi-destination ingest with virtually unlimited ingest destination targets
- LUT support for HDR workflows
- Three-panel GUI design with two modes of operation:
 - o Index/browse/metadata/right-click mode: gives the user full control over every aspect of the ingest job settings and properties
 - o Index/browse/metadata and ingest mode: streamlined ingest operation that minimizes number of required clicks allows for very fast high-demand ingest operations to quickly ingest a large volume of clips
- Flexible Auto-sync to group video/audio tracks based on timecode with the ability to generate subclips, multi-groups and sequences
- Support for almost all file-based formats in the market, from mobile media (iphone, Android, DSLRs, GoPro) through HD and 4K formats (including XAVC class 480, DNxHR)
- Support for the latest Master file-based formats:
 - o RED
 - o XAVC – i
 - o XAVC Long G
 - o XOCN
 - o SStP



Technology

- It allows for three modes of operation:
 - o Client <> Cluster mode: ideal for enterprise deployments supporting both ingest over LAN and remote accelerated ingest over WAN
 - o Individual mode: ideal for smaller deployments where individual ingest hosts are desired
 - o Field ingest mode: ideal for those who wish to do field ingest disconnected from on-prem infrastructure into removable devices for subsequent ingest into the production system.
- Client flexibility
 - o Local and web client to support local and remote deployments
- Ready for cloud deployment

GRASS VALLEY

K-Frame V-Series Production Switcher

A No-Compromise Switcher for Cost- and Space-Constrained Applications

In March 2017, Grass Valley launched the 3RU K-Frame V-series, which extends the flexibility of the Grass Valley production switcher product line in price and performance to address the needs of low to mid-range broadcast applications – especially appropriate for broadcasters, smaller trucks, mid-tier universities and institutions, sports venues, corporate, government agencies and Houses of Worship. Along with the compact GV Korona panels, the new 3RU V-series frame represents a powerful, full featured switcher that is available at an aggressive and attractive list price in a small footprint that is convenient for many applications that simply cannot accommodate Grass Valley’s larger switchers.

Unlike many smaller switchers on the market, this space-efficient switcher requires no compromises on enterprise features. It’s modular for field reconfiguration and serviceability – a true convenience not offered in competitively priced switchers. It also supports 4K UHD in quad split and 2SI modes and can handle up to three licensed MEs and two additional video processing engines (VPE’s) for added keying power. Perhaps best of all, it’s a full-fledged member of the K-Frame family, so the V-series can be used with any GV switcher panel and requires no training for anyone accustomed to working on Grass Valley K-Frame switchers. Plus, shows created in any K-Frame switcher can be saved and shared among other switchers, including the new V-series. This convenience can be leveraged by customers who may already own a Kayenne or Karrera switcher and would like to share the “look” they’ve created in a different application.

Key Features:

- K-Frame V-series frame is only 3RU
- Up to 3M/Es plus two additional VPEs, each with four full function keyers and 2DDPMs
- Optional DPM module for iDPM functionality
- Scales to 32x16 SDI and 4x2 MediaPorts
- Supports SD, HD and 3G 1080p for 4K
- 4K UHD processed using Square Division Quad Split (SDQS) or 2 Sample Interleave (2SI)
- Up to 32GB ImageStore, with RAM recorder included as standard
- Two offset analog reference outputs
- Rugged modular design for field reconfiguration and serviceability
- Mix and match I/O boards including a frame sync and format conversion board and in the future an IP I/O board



www.grassvalley.com

GRASS VALLEY

XCU XF Fiber Base Station

Hybrid Base Station With Redundant IP, 12G SDI, Full Base Band

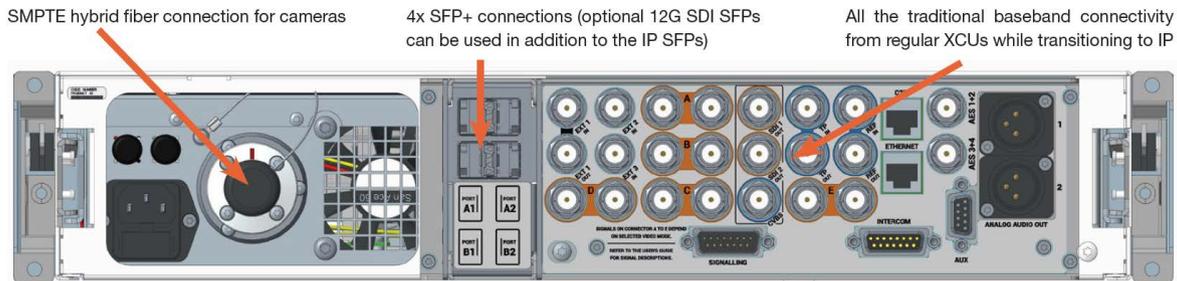
This next-generation camera base station combines a unique cradle concept, allowing increased utilization of the equipment, with a further increased flexibility in its connectivity. Four SFP slots are available on the new fully backward compatible cradle allowing fully redundant 10G IP connectivity and, in addition, optional 12G SDI outputs on top of full base band connectivity. The IP connectivity is prepared supporting interoperability as described in the AIMS roadmap including VSF TR-03. The 12G SDI connectivity supports requirements requested especially for OB applications. The modular concept of the XCU cradles allows fast and easy converting from 12G SDI to fully redundant IP I/O's or vice versa by changing SFP modules without losing any of the base band connectivity.

The wide range of formats delivered by the multiple LDX Series cameras including 4K/UHD, advance 3G formats, HDR and WCG operation

and all high-speed formats including the unique AnyLightXtreme flicker reduction system are fully supported by all kind of I/Os on this XCU.

To support new kinds of remote applications, the IP-based signal transmission between the camera head and the new XCUs allows the use of regular LAN networks and COTS switches to remotely connect camera heads and base stations together, providing additional flexibility in operation.

This new generation of camera base station offers an outstanding solution by supporting all the requirements known today and in the upcoming future with an unparalleled level of flexibility, upgradability and utilization — all delivered in a very small form factor of just 2RUs 19-inch, and a low weight of just 8 kg, making them a perfect match to the requirements of having more cameras in a given rack space available in mobile production units.



GRASS VALLEY

Densité UHD-3901 UHD Up-Converter With HDR

Easily Move Between HD/3G and UHD Workflows, Including SDR/HDR Conversion

The Densité UHD-3901-UC is a revolutionary product designed to complement existing applications, providing a simple way to move between HD/3G and UHD formats as well as from SDR to HDR.

The UHD-3901-UC cards accommodate a gradual adoption of HD production elements into UHD broadcasting workflows, while protecting the investment in installed equipment.

These cards are useful in several applications:

1. When you need to produce content in UHD, but have a mix of HD, 3G and UHD cameras, the UHD-3901-UC provides the ability to create a common format for the end result. This is a great solution for live sports or other applications that often produce in HD along with UHD and keep a mix of cameras. The card offers dual channels of up-conversion and supports both two sample interleave (2SI) and square division quad split (SDQS) UHD. The UHD card enables conversion between the two formats for simplified interoperability.
2. When you want to use Slo-Mo in a UHD production, the UHD-3901-UC processing module allows regular and slow motion HD or 3G cameras as well as other HD/3G sources to be used for UHD productions by up-converting to a common UHD format. Using the card in combination with HD cameras enables use of 6X slow motion in a UHD workflow. The UHD-3901 provides a method to take SLOMO output from a summit 6X server to create a UHD version.
3. When you need to integrate 3G Computer Graphics (CG) with live UHD production, the UHD-3901-UC can take the output of a graphics generator during production and produce the UHD fill and key for the switcher. The UHD-3901-UC provides a readily available and simple solution for adding graphics to a UHD production.
4. When you need to produce HDR content, but have a mix of SDR and HDR cameras, and possibly a mix of

HDR formats to support, the UHD-3901-UC processing module allows existing SDR cameras and devices to contribute to High Dynamic Range productions. The card enables conversion from SDR to HDR formats, supporting S-Log, HLG and PQ formats, with conversion between formats. The UHD-3901-UC allows productions that have a



mix of camera types (HD/3G/UHD with or without HDR) converting those that have only SDR support to HDR to create an HDR production. The card can also convert to UHD to create a full UHD HDR production, supporting both REC 709 and REC 2020 color spaces with the optional SDR to HDR converter. Take your productions from ordinary to extraordinary!

5. When you need a lot of UHD and HDR conversion in a limited space, the UHD-3901-UC delivers a market-leading density of 24 UHD up converters in a 4RU frame and sports the highest density of conversions per RU.

This multi-functional card, sports not only a dual-channel UHD converter that supports both 2SI and SDQS, but the highest density of conversions available on the market, while also providing SDR to HDR conversion supporting both HLG and Dolby PQ. The UHD-3901 is a powerhouse of an up-converter!



HARMONIC

EyeQ Video Compression Optimization

Enhances QoE While Reducing Bandwidth Consumption by Up to 50% for OTT

Harmonic's EyeQ™ real-time video compression optimization solution enables broadcasters and video content and service providers to deliver a superior viewing experience on HTTP-connected devices while reducing bandwidth consumption by up to 50 percent — without requiring any changes to underlying existing delivery infrastructure and video players.

As an enhancement for Harmonic's widely deployed software-based Harmonic PURE Compression Engine™, the EyeQ solution directly improves the bottom line for video content and service providers through reduced network delivery and storage costs, an increased ability to reach more consumers over congested mobile networks, and by enabling a more consistent viewing experience with enhanced video quality and less buffering. The Harmonic PURE Compression Engine is the heart of Harmonic's acclaimed Electra™ X and VOS™ Cloud media processing platforms for OTT multiscreen video delivery.

Harmonic's EyeQ video compression optimization solution is one of the first compression solutions that can assess and adjust encoding parameters to leverage the mechanics of the human eye, without adding latency to the encoding process. Until the EyeQ solution emerged onto the market, there was not an encoding technology capable of measuring video quality beyond distortion, taking into account the properties that are critical to the human visual system's (HVS) perception of video quality.

Traditional encoding methods, such as CBR and CVBR, are complex and ineffective at measuring video quality according to the HVS. Moreover, these approaches often utilize too little or too much bandwidth to sustain satisfactory video quality. While there are video compression optimization solutions on the market today, they have limitations.

Artificial intelligence embedded in the EyeQ solution leverages the mechanics of the HVS to continuously assess video quality in real time and focus bits where and when they matter most for the viewer, measuring and adjusting video quality in real time to achieve true constant quality. Unnecessary bits can then be eliminated, allowing content providers to consistently meet video quality targets at the lowest possible bandwidth.

EyeQ solves a number of significant challenges for video content and service providers in the OTT environment. Accelerating consumption rates and demand for advanced services like nDVR have driven up storage costs. Larger screens are propelling higher bitrates and resolutions. And viewers have extremely high expectations about video quality, so buffering is not an option, no matter what the network conditions may be.

What's more, the bring-your-own-device nature of the OTT environ-



ment requires compatibility across a broader ecosystem and a standards-based video delivery approach, with limited control over client device transition to next-generation codecs like HEVC. If video content and service providers want to provide superior video quality on every screen, while keeping CDN and storage costs low, they need more advanced video compression technology.

EyeQ is the only product on the market that fully addresses these industry challenges, allowing video content and service providers to deliver purer video to viewers, increasing their satisfaction with the OTT service and extending their viewing session. When consumers are glued to the screen longer, content monetization rises. By lowering CDN and storage costs by half, EyeQ also has the potential to help deliver significant CAPEX and OPEX savings, and increased profitability, for operators.

www.harmonicinc.com/about/technology

HITACHI KOKUSAI

Z-HD5500 Studio/Field Camera With HDR

Superior, Cost-Effective 1080p Acquisition Even in Challenging Lighting

Incorporating Hitachi Kokusai's latest advances in CMOS imaging technology, the Z-HD5500 studio and field production camera cost-effectively addresses the challenges of shooting in studios and venues with low-cost or varying-frequency LED lighting and large-screen LED displays, while meeting high-performance 1080p acquisition specifications and bringing High Dynamic Range (HDR) to high-definition productions.

Television studios, houses of worship, performing arts centers, sporting arenas and other venues are increasingly integrating LED lighting, display and projection systems that operate across a wide array of frequencies. While LED lighting is power-efficient and can easily be adjusted for intensity, color hue and saturation, the use of low-cost LED fixtures or varying LED frequencies within an environment can cause visible artifacts in image acquisition, as the pulse rate inherent in the LED light source misaligns with the camera capture. This can occur more often with inexpensive or aging LED lighting; when LED displays appear within the camera frame; or when multiple LED lights from different manufacturers are used together.

Designed to eliminate LED synchronization issues, the Z-HD5500 adapts easily to difficult mixed-frequency LED lighting and display situations. Hitachi Kokusai's new full-frame, 2/3-inch, progressive-scan CMOS image sensors enable flicker-free capture of non-synchronous LED lighting and displays.

In conjunction with Hitachi Kokusai's latest digital signal processing and exclusive low-noise circuit technologies, the new 2.3 megapixel sensors deliver excellent image capture performance not normally found in the Z-HD5500's price range, including a 14 f-stop dynamic range and a 62dB signal-to-noise ratio. Standard sensitivity of F10 at 2000lx and a horizontal resolution of 1000 TV lines (luminance channel) enable sharp pictures with low noise and ultra-low vertical smear even at high gain.

High Dynamic Range (HDR) capabilities in the Z-HD5500 enable HDTV productions with increased details in the blacks and mid-tones, brighter highlights and more saturated colors. Hitachi Kokusai is a proponent of the use of HDR in HD acquisition to enable improved visual results without the higher infrastructure costs, processing overhead and delivery bandwidth requirements of Ultra HD. The Z-HD5500 supports HDR variants including HLG (Hybrid Log-Gamma) — aiding compat-



ibility with modern standard dynamic range (SDR) TVs prevalent in many homes — and HPQ, which is compatible with the HDR10 open standard for consumer TVs.

The Z-HD5500 offers a choice of SMPTE fiber or triax connectivity, and can be paired with dedicated fiber or triax camera control units (CCUs), or with the dual-cable HITACHI CU-HD1300FT for deployment flexibility.

Significantly, the Z-HD5500 brings all of these capabilities — from native 1080p progressive scan throughout the entire camera chain, to HDR, to optimization for challenging LED lighting conditions — at a price point typically reserved for 1080i or 720p cameras.



www.hitachikokusai.us

HITACHI KOKUSAI ELECTRIC COMARK LLC

PARALLAX™ VHF Liquid-Cooled DTV Transmitter

PARALLAX™ VHF – Liquid-Cooled Doherty Transmitter With Up to 50% Efficiency

PARALLAX™ VHF is the latest offering from Hitachi Kokusai Electric Comark LLC for medium and high-power VHF band 3 DTV transmitters. The VHF Band 3 version of PARALLAX shares all the mechanical architecture, user interface, and performance with the award-winning UHF version of PARALLAX.

PARALLAX VHF is the highest power solid state VHF B3 transmitter available on the market with up to 24.3kW pre filter RF power (23kW after filter) per cabinet. It supports up to 48.6kW pre filter RF power (46kW after filter) with only 2 cabinets! No other manufacturer has this level of RF power density.

The Power Amplifier in PARALLAX VHF uses Doherty technology for ultra-high efficiency, up to 50%. The unique vertical orientation PA architecture produces 1.6kW output power per module and is rated for the same output power in ATSC 1.0 (8VSB) as ATSC 3.0 (OFDM). To further aid compactness, a double-sided liquid cooling plate optimizes the RF power density with twice the power density of competing models. The transmitter is future proof for customers looking to maximize repack replacements.

The transmitter system features liquid cooling, with a very unique stainless-in-aluminum cooling loop integral to each PA module. This keeps coolant fluid completely isolated away from the aluminum heat sink, eliminating any chance for corrosive effects associated with aluminum cold plates. And the overall cooling system design is based on U.S. standard interfaces and materials. The power supply unit (PSU) and PA are separate hot-swap modules to reduce PA weight. They both plug directly into the transmitter's back plane using blind-mate connector technology. The PSU incorporates commercial off-the-shelf AC to DC rectifiers (3 per PSU) with support for either 240VAC single phase or three phase 208VAC or 480VAC – no step up/down transformers are required. Power supply rectifiers are sourced from the telecom server industry to keep the unit easy to service;



efficiency and reliability are second to none.

PARALLAX transmitters feature the EXACT-V2 next generation DTV excitors. EXACT-V2 delivers an ATSC compliant, on-channel RF output and performs RF precorrection of both linear and non-linear distortion with the company's industry leading Digital Adaptive Precorrection (DAP) technology. DAP automatically corrects both the linear and nonlinear system distortions inherent to all DTV systems. The use of DAP provides the lowest cost of operation with very high system efficiency and RF SNR performance. EXACT-V2 is an "IP Optimized" platform that features seven Gigabit Ethernet ports. The exciter complies with the STL interface (A/324) plus it offers (optional) built-in ALP encapsulation. It features "DualCast" technology, which is easily upgraded from ATSC 1.0 to 3.0, protecting investment today for use tomorrow.

The PARALLAX high-efficiency DTV transmitter system has been designed to stay on the air during unattended operation with fail-safe operation. This is primarily due to the use of a Distributed Transmitter Control (DTC) system. With DTC architecture, all subassemblies incorporated in the transmitter are fitted with a microprocessor for both monitoring and self-control. Internal transmitter communications of these subassemblies is made via a Controller Area Network (CAN) bus.

PARALLAX has multiple HMIs (Human Machine Interface) for control and monitoring. HMIs include a 15-inch color touch screen, remote web control, SNMP v2, and dry loop interface. Event logging is provided standard in the control system.

PARALLAX is manufactured, serviced and supported from the company's facility in Southwick, Mass., USA. PARALLAX builds on Hitachi-Comark's years of experience and incorporates the industry's most unique design features that guarantee unparalleled performance and reliability.

www.comarktv.com/products/dtv-transmitters/med-high-power-vhf-b3

HITACHI KOKUSAI ELECTRIC LLC

ATSC 3.0 Starter Encoder and Gateway Solution

ATSC 3.0 Starter – Integrated Solution to Migrate From ATSC 1.0 to 3.0

For the 2017 NAB Show, Hitachi-Comark introduced key ATSC 3.0 building blocks that will be simple to use yet take advantage of the powerful capabilities of ATSC 3.0. At NAB, the company introduced the “ATSC 3.0 Starter” which is an integrated solution available for broadcasters to easily and quickly migrate their DTV station from MPEG-2 ATSC 1.0 workflow to ATSC 3.0. ATSC 3.0 Starter provides the following functionality required for a broadcaster to deploy an ATSC 3.0 system:

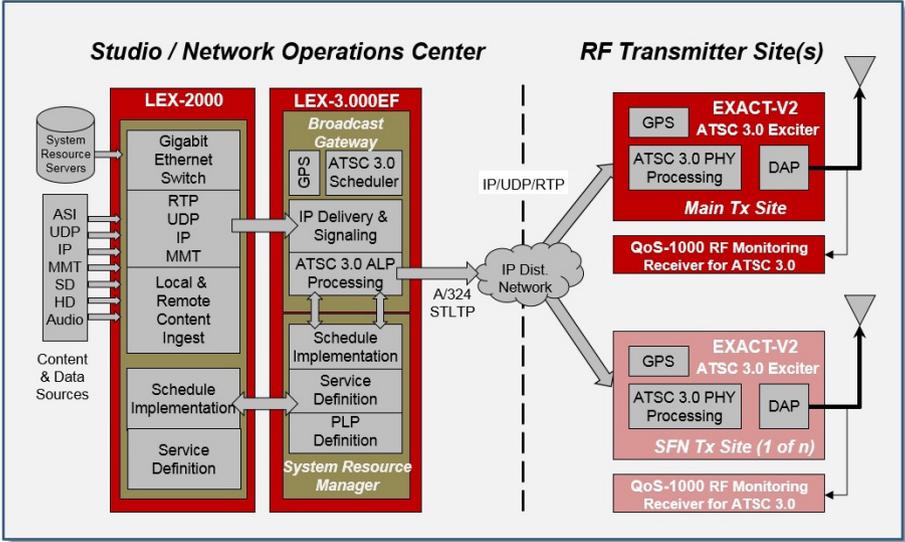
- Source Encoding
- Broadcast Gateway
- Resource Manager
- DTV Exciter
- QoS Monitoring

ATSC 3.0 Starter includes H.265 HEVC encoding, IP signal processing and delivery via RTP/UDP/IP, MMT processing, Broadcast Gateway function and a simple user interface for system configuration. The foundation of ATSC 3.0 Starter is the field proven LEX Series encoder/multiplexer platform. The LEX Series platform already accommodates many of the functions necessary for the ATSC 3.0 including:

- LEX IP connectivity enables web-based remote systems resource management
- IP Integration with remote servers for system functions (Scheduling, Ad Insertion, etc...)
- four high-speed IP external ports support distributed ATSC 3.0 architecture
- Web-driven Management Interface
- LINUX processing domains for applications
- High-speed Internal Switching and Routing Domain
- Multiple high-performance Encoding Domains (MPEG 2, IP, MMT...)
- System Resource Manager and Broadcast Gateway

There are two distinct product offerings within the ATSC 3.0 Starter. The first is an upgrade path for customers with existing platforms that want to utilize their fielded LEX products. The upgrade is perfectly

suited for early adopters and LPTV broadcasters. The second solution incorporates the LEX platform in conjunction with a newly developed Expansion Frame (LEX-3.000EF) to provide a full suite of functionality for ATSC 3.0 deployments. The LEX-3.000EF provides the Scheduler and System Resource Manager functions in a common platform.



ATSC 3.0 Starter works seamlessly with the company’s newly introduced EXACT-V2 ATSC exciter that is used throughout the Hitachi-Comark DTV transmitter product line. EXACT-V2 is an “IP Optimized” platform that features seven Gigabit Ethernet ports. The exciter is compatible with the STL interface (A/324) plus it offers built-in ALP encapsulation (optional). It features “DualCast” technology, which is easily upgraded from ATSC 1.0 to 3.0 protecting investment today for use tomorrow.

Finally, the company introduced an update to the QoS-1000 RF testing and monitoring solution. The QoS-1000 was shown with the latest ATSC 3.0 software for monitoring the 3.0 waveform. Hitachi-Comark’s end-to-end ATSC 3.0 solution is comprehensive and affordable.

IHSE USA

Draco vario KVM/SDI Extender

SDI-to-KVM Converter Modules for KVM Switching

IHSE's Draco vario KVM/SDI converters advance the capabilities of SDI-to-computer video by automatically detecting the input video format and instantly changing between SDI broadcast formats to high-definition DVI, HDMI or DisplayPort computer video formats. Traditionally KVM and broadcast systems have been considered isolated architectures, but now with IHSE's new 486 Series, these different architectures can be shared and configured under a single matrix sys-

tem. The Draco vario KVM/SDI extenders are used in TV studio, post-production, digital cinema or audio-visual applications in which users need to show digital video from an HDMI source on a professional SDI monitor, or input an SDI source for preview and monitoring purposes through a KVM switch connected to a computer display. KVM has become much more important for broadcast-related system design because of the increased adoption of digital video servers and computers throughout the broadcast ecosystem. As system designers continue to integrate server-based architectures for editing and playback options, they must configure systems using traditional human interface devices, such as a keyboard and mouse from each workstation. However, KVM is usually considered part of the backroom network services, so many of the latest features of a professional KVM system are missed during the original design phase.



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A key benefit of the Draco vario KVM/SDI extender is its ability to connect directly to a KVM matrix switch. Previously, creating an SDI-

to-HDMI conversion required a secondary converter box connected to the KVM extender. In this scenario, each display or source connection required additional cabling, power and a converter unit – thus doubling the unit cost and maintenance concerns. With the Draco vario KVM/SDI, the conversion to and from the extenders happens inside the same module, thereby reducing power consumption and cabling and eliminating the need for extra power outlets or module placement. Video scaling and deinterlacing is included in the SDI extender, enabling conversion as required between 720p50/60 or 1080i50/60 SDI video streams and digital formats including 1080p, 1600x900 and 1920x1200. This capability ensures that the appropriate video resolution is available to suit the connected monitor. SFP modules are available to suit dual-input and dual-output configurations. In addition, the extender supports a loopback option, enabling an SDI signal to be passed on to additional SDI devices while being input into the extender for KVM distribution.

There are two models available: the L486 model that converts SDI input signals to IHSE's flex-port technology for integration to a KVM matrix switch, and the R486 model that converts flex-port technology to SDI for connecting broadcast-style monitors. Each model offers optional redundant flex-port connections that can be used for critical-path applications where a backup system is desired or where a source needs to be shared between two separate switch systems. This capability enables an uninterrupted connection during maintenance, a backup system in fully redundant or mission-critical environments, or the ability to share CPU sources between multiple KVM systems.

Both the L486 and R486 models support optical fiber connections between the extenders and KVM matrix, and can extend video, keyboard and mouse up to distances of 10 kilometers on each side of the matrix. Often it is necessary to run a second cable to a different matrix in case the main input is lost. With an optional extender that adds dual-port links for redundancy, these converters can automatically switch over to the second input — a great option for operations that cannot afford to lose a signal or go off air.

www.ihseusa.com

IKEGAMI

HDK-73 2/3" CMOS Unicam HD Camera System

Cost-Effective Camera System Ideal for Studio and Field Applications

The 2017 NAB Show marked the debut of the HDK-73 camera, the latest addition to Ikegami's Unicam HD camera series. Featuring F12 high sensitivity 2/3-inch CMOS sensors, the HDK-73 provides exceptional picture quality in either 1080i or 720p in a cost-effective camera system, making it ideal for an extensive range of applications both in the studio and in the field.

The HDK-73 has docking style construction allowing studio configuration with fiber or triax base stations, as well as self-contained operation for wireless or onsite recording applications. Fiber configurations include a choice of SMPTE or OpticalCon connectors. The camera cable distance with SMPTE cable and connectors is 3300 feet, with power provided from the base station. The OpticalCon solution reduces cost, although the maximum cable distance with OpticalCon is reduced to 1000 feet. Both fiber solutions support long distance transmission (more than five miles) using a pair of SM fibers, with power provided locally for the camera head. The HDK-73's digital triax system features extremely low latency over a distance up to 3,300 feet on 1/2-inch triax. In addition, all three base stations are compact (1.5 RU) and lightweight.

The video processing DSP includes the anticipated functions from Ikegami to optimize color reproduction and detail in the picture. Included with the HDK-73 are key new features such as Ikegami's Quick EZ Focus assist and CAC chromatic aberration correction. Also included is HLG hybrid log gamma for

HDR picture origination.

Control of the HDK-73 is provided using a range of control panels from the simple joystick OCP-10 to the sophisticated touch screen OCP-300. Control panels can be connected direct to the base stations. Assignable Ethernet connection is also available on Ikegami's newest camera system.



www.ikegami.com/br/products/4k/pdf/HDK-73_CATALOG_US_U379A.pdf

IKEGAMI

SHK-810 8K Ultra HD Camera System

Achieves Significant Breakthroughs in Size, Weight and Operability

Developed in collaboration with Japan Broadcast Corp. (NHK), the SHK-810, is a breakthrough camera notable for the significant size reduction and lightweight design that it brings to field and live production, which can be operated in the same manner as the current broadcast camera systems.

Ikegami's 8K expertise has been sought by content creators worldwide, with its 8K camera systems onsite for many globally-viewed events. These include Super Bowl 50 in San Francisco, the 2016 Summer Olympics in Rio de Janeiro, the 2012 Summer Olympics in London, 2015

& 2016 SUMO Tournaments, MLB Baseball, FIFA World Cup 2014, FIFA Women's World Cup 2015, and Wimbledon 2015.

In anticipation of increased global demand, Ikegami exhibited the SHK-810 8K UHDTV camera at the 2017 NAB Show in Las Vegas.

Ikegami will continue to lead the way with 8K UHDTV technology, in keeping with its commitment to meeting broadcasters' needs for 8K/4K ultra high resolution video solutions.

The SHK-810 UHDTV camera employs a single 33 million-pixel Super 35 CMOS sensor, achieving 4,000TVL horizontal and vertical resolution.

The color filter on the sensor is matched with the dual-green SHV color arrangement, and achieves a high level of modulation depth.

The System Expander enables the use of large viewfinders and full studio lenses, converting the portable camera into a full facility studio/field camera.

A viewfinder detail (VF DTL) function allows the camera operator to increase the detail edges to the viewfinder and picture monitor video for easy focusing. In addition, the Lens Aberration Correction function and Communication features (Tally, Intercom, etc.) are also available for conventional HDTV camera operation.

The PL-Lens mount allows use with 8K lenses, cine lenses, 4K lenses and custom designed zoom lenses for single-chip SHV cameras. Also, a flange back adjustment system is built-in, enabling back focus adjustment of PL-mount lenses without shims.

The standard SMPTE fiber cable can be used between camera and control unit (CCU), enabling long-distance transmission for live broadcasting.



[www.ikegami.com/br/products/8k/pdf/SHK-810\(20170328\).pdf](http://www.ikegami.com/br/products/8k/pdf/SHK-810(20170328).pdf)

IMAGINE COMMUNICATIONS

Selenio™ One XC Software-Only Transcoder

Next-Generation MPEG-2/H.264 Transcoder for High-Quality Service Delivery

Selenio™ One XC is a new software-only addition to Imagine Communications' next-generation Selenio One compression platform, which enables media companies to perform a range of encoding, transcoding and related processing operations from a single, uniquely agile solution. The Selenio One platform is "Powered by Zenium™" — Imagine's industry-first, pure microservices-based technology for building cloud-native applications and services.

Zenium offers a groundbreaking approach to technical adoption, enabling media organizations to more easily adapt to market dynamics by quickly and seamlessly integrating the latest technologies and capabilities.

Designed on this unique microservices-based framework, the Selenio One platform can be deployed in different physical implementations to optimize for density, quality and cost, and can easily add new features and future formats as they are developed.

The first iteration of Selenio One XC provides high video-quality, highly efficient linear transcoding capabilities. Supporting any-to-any H.264/MPEG-2 IP-based transcoding, it can also be paired with an optional multiplexer to provide bandwidth-conserving statistical multiplexing of expensive or bandwidth-constrained distribution channels.

The product is scheduled to support adaptive bitrate (ABR) technology for Over-the-Top (OTT) distribution operations in the summer.

Selenio One XC can run in Linux-based virtual machines, making it deployable in a variety of datacenter and cloud settings. The software-only, cloud-native nature of Selenio One XC enables media companies to support both premises- and cloud-based deployment modules — or a mixture of the two — as well as take advantage of steady increases in the computational capabilities of commercial off-the-shelf (COTS) computing platforms.

With the microservices-based Selenio One XC, features can be shared across different configurations within the Selenio One platform or by other Zenium-powered solutions in Imagine's portfolio.

Zenium-based products also sup-

port a "plug-n-play" model that enables the rapid integration of third-party technologies, such as the latest and most powerful codecs — offering significant performance and speed-to-market advantages over platforms that rely on proprietary codecs.

The introduction of Selenio One XC follows the earlier launch of



Selenio One XO, a high-density, adaptive bitrate (ABR) transcoding product for OTT multiscreen applications. Supporting up to 720 ABR profiles or 360 HD linear channels per 4.3RU server, it is the market's highest-density with high-quality video transcoding solution.

Selenio One XO and XC can be deployed in tandem to address specific compression requirements and to enable a hybrid deployment model that provides media companies with better alignment of compression resources and market demand across linear, multiscreen and OTT applications.

To maximize operational efficiency, every Selenio One configuration uses the same codebase for common functions and shares a common management system, enabling all encoding, transcoding and processing functions to be controlled and managed through a single solution and interface.



INTERRA SYSTEMS

BATON® File-Based Hybrid

The First Next-Generation, Hybrid QC Solution for File-Based Workflow

Today, automated QC is an essential part of any file-based workflow, offering reliability and significant operational efficiencies. Automated QC tools offer seamless post QC actions based on the automated QC results, creating well-integrated and efficient broadcast workflows. Yet, automated QC tools do not fully implement an organization's QC policy, as there are several checks that cannot be automated in the current state-of-the-art technology, like lip sync detection.

Some of the issues detected by automated QC tools need to go through manual (or eyeball) QC checks to eliminate false positives before declaring the content ready for distribution. A broadcast QC facility ideally needs a single QC platform, where the entire QC policy of the facility is implemented, through a combination of automated QC checks and manual QC checks. In addition, all workflow integration and actions must be based on the execution of all checks that comprise the QC policy, not just the automated QC checks.

This allows the workflows to be triggered based on the results of the full QC policy, completing the missing link in comprehensive and efficient QC.

Interra Systems, the leader of the automated QC solutions, recognized this need and expanded the automated QC framework in its BATON® version 7.0 solution, creating a unified hybrid QC platform that implements organizational QC policy and helps improve operational efficiency in broadcast workflows.

The latest version of BATON, Interra Systems' industry-leading QC solution for file-based SD, HD, and cloud-based workflows, is the first quality control system to enable automated and manual QC checks on a single platform. Just like automated QC, each facility that uses BATON can identify a list of manual QC checks to implement their QC policy. The BATON workflow has been augmented to ensure that these manual QC

checks are also performed on the content, and workflow decisions are based on the complete list of automated QC and manual QC checks. The list of checks in the test plans can be populated with a predefined manual QC checks based on QC policy and also from industry forums like DPP, EBU-QC, etc. With the latest version

of BATON, users have the flexibility to register any new custom error so that it can be made available for manual QC check to the entire facility. Content QC will only be considered complete after a user has completed all of the required manual QC checks as well.

BATON 7.0 includes a new, powerful BATON Media Player (BMP) that provides a visual inspection platform for manual QC checks and



review of automated QC results. This allows users to manage and verify the content against the list of enabled manual QC checks.

If the user has enabled manual QC checks, there's a filtering option that shows whether all the tasks have been automated QC completed, as well as a review of manual checks pending. For all these tasks post-QC actions will not run until user does a complete review.

Adding manual QC checks to BATON further establishes it as the most trusted and complete choice for file-based QC. While BATON continues to add more algorithms to advance automated QC checks, it leads the way by recognizing the broadcaster's need to implement QC policy through a combination of automated QC and manual QC checks in a single framework. BATON is the first and only QC solution offering this productivity improvement framework for broadcast operations.



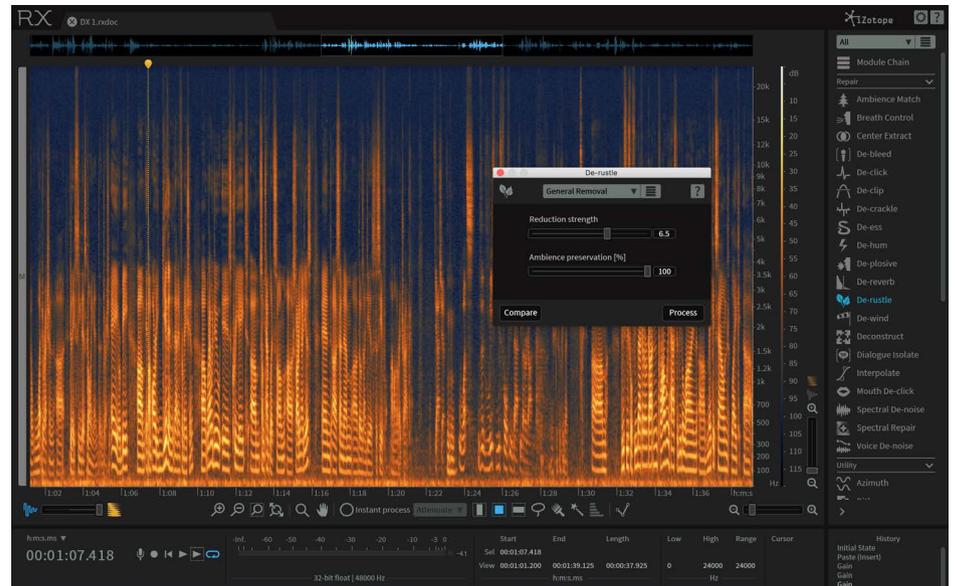
www.interrasystems.com/file-based-qc.php

IZOTOPE INC.

RX 6, Audio Repair

Instantly Repair Audio Issues, Once Unimaginable.

RX is widely recognized as the industry standard in audio repair for post and music production. Version 6 introduces new features and tools that will completely change the way audio repair is done for years to come. Packed with new technologies like wind and mic rustle removal, voice isolation, composite editing, de-bleed, spectral de-esser and breath reduction plug-ins and much more, RX 6 is our biggest upgrade ever.



www.izotope.com/en/products/repair-and-edit/rx.html

JVCKENWOOD USA CORP.

PB-CELL200 ProHD Portable Bridge

Portable 4G LTE Bonded Cellular Uplink

Carry it anywhere! This portable bridge is a powerful bonded cellular hotspot that features Peplink's patented SpeedFusion™ technology that allows you to reliably stream your JVC camcorder signals to any destination on the internet. Unlike typical bonded solutions, the PB-CELL200 enables you to stream live video from multiple cameras to HD-SDI decoders or servers at a central location. It comes with dual cellular modems with redundant SIM slots letting you use up to four different cellular providers for bandwidth bonding, data overage protection or eliminating blind spots.

Dual-band Wi-Fi gives you two independent high-speed networks that work together (2x2 MIMO) to maximize throughput. In addition to live streaming, it functions as a secure hotspot for connecting computers, tablets, smartphones and other devices to the internet or to your enterprise LAN with a secure VPN. When used with IP-capable JVC ProHD, PTZ and 4KCAM cameras, you now have not only streaming, but full remote camera control and IFB audio on select models. JVC's Wi-Fi-equipped cameras connect to the unit without cables leaving you free to position the Bridge in its most optimal location.



Main Features:

- Robust, bonded LTE connection for multiple streaming cameras, encoders and decoders
- Totally self contained — no modems strapped on
- Powered from Anton-Bauer battery (optional) or from included AC adapter
- Dual embedded cellular and redundant SIM slots
- Accepts SIMs from Verizon, T-Mobile, A.T.& T. and Sprint
- Aggregates up to four network links (Cell x2, plus Wi-Fi or Ethernet)
- Powerful omnidirectional fiberglass encased high gain (3–4 dB) cellular antennas
- Wi-Fi connection to JVC cameras provides location flexibility
- Webcasting HW/SW devices via LAN or Wi-Fi
- Stream live video to JVCVIDEOCLOUD, Facebook, YouTube or any other CDN
- Powerful internet hotspot for computers, smart devices
- Two RJ-45 connectors for wired LAN connections.
- Extends enterprise LAN into the field with a secure VPN
- GPS receiver provides location to central server
- Full-command console control of all of your cameras and remote cellular bridges
- Economical cellular data packages available from JVC
- Global LTE Advanced and FirstNet options available
- All ProHD Bridge products are FCC/CE-certified and comply with RF exposure absorption (SAR) safety standards.



JVCKENWOOD USA CORP.

ProHD Bridge

Wireless, Mobile, Bonded 4G LTE Bridge for Rooftop Installation

The ProHD Wireless Bridge is the ideal IP solution for covering news, sports and events — virtually any live broadcast where camera mobility and high reliability are paramount. It combines powerful 5 GHz camera modules with a mobile-mounted, dual aggregated modem uplink that delivers your camera signals securely to your broadcast facility anywhere in the world. Whether you're streaming from one camera or several, the Bridge delivers perfectly encoded HD content with low latency and reliability that meets or exceeds the performance of typical bonded solutions.

JVC believes that remote broadcasting begins in the camera. That's why we've designed our cameras with built-in encoders that feature the highly regarded Zixi error correction, automatic repeat request and variable bit-rate control. And with the encoder built-in, the camera operator gets viewfinder status indications of the remote connection and outgoing stream quality. Built-in two-channel IFB communication is possible with some camera models. In a Bridge system, JVC 800 series cameras utilize the long range WB-MCA100 Mobile Camera Adapter, which attaches

directly to and is powered from the camera. The camera adapter features a powerful 5 GHz transceiver that operates up to 2,000 feet from the mobile base station. It plugs directly into the host USB connector on the camera and is controlled from the camera. And because Mobile Camera Adapter is so compact and affordable, you can install one on each of your field cameras so that they're ready for remote shooting at any time. Handheld JVC cameras can also take advantage of the Bridge with a smaller radio module with a 400-foot range.

After thorough testing, JVC's engineers have determined that the roof-top cellular connection is superior to that found in portable bonded systems. In a ProHD Wireless Bridge system, your vehicle becomes the remote broadcasting hub, receiving signals from one or more field cameras and relaying them to your broadcast facility through an advanced access point and cellular uplink. JVC has designed a high-performance array of four diversity high-gain cellular antennas connected to a cellular uplink that aggregates signals from two mobile carriers. The WB-CELL200 Cellular Uplink creates a virtual private network (VPN) letting

you not only securely transmit camera signals, but also providing a high-speed mobile hotspot that can be used by your field staff to access newsroom systems, submit stories, upload files, etc.

A separate antenna and mobile access point (WB-MAP100) receive the 5 GHz signal from the cameras and other network devices and deliver them to the cellular uplink. All of the electronics and antennas are securely mounted to the roof assembly and are IP67 (moisture) rated and designed for harsh mobile environments. Installation is a snap. Only 12-volt power is needed.

The ProHD Bridge works with JVC's expanding lineup of ProHD and 4KCAM camcorders as well as our new PTZ models with IP communications capability.



pro.jvc.com

LEMO

Anglissimo Connector

Adjustable Right-Angle Connector for Cable Clutter

The Anglissimo™ plug is an eight-in-one plug that can be adjusted by the user to all space constraints.

This new elbow connector design allows a camera manufacturer to adjust and position the



connector in an efficient way in order to prevent cable clutter.

Each connector can be orientated during its assembly into eight positions. The connector then remains securely positioned in its orientation.



www.lemo.com/en/other-special/right-angle-connector-anglissimo

LEYARD AND PLANAR, A LEYARD CO.

Leyard LED MultiTouch

First Seamless LED Touch Video Wall

The new Leyard® LED MultiTouch is the industry's first seamless LED touch-enabled video wall, providing a seamless, smooth light-weight durable touch surface that delivers superior performance enabled by patent-pending Leyard® PLTS™ (Pliable LED Touch Surface™) technology.

The breakthrough Leyard LED MultiTouch brings advanced interactivity to fine pitch LED video walls, opening up LED display technology to a wide range of collaborative applications that until now were the sole domain of LCD displays. From broadcast to corporate settings to education institutions, Leyard LED MultiTouch offers a seamless touch experience for LED video walls up to 196" diagonal with high resolution 1.2 millimeter pixel pitch.

Benefits of the Leyard LED MultiTouch include:

- High-performance touch: The Leyard LED MultiTouch allows for up to 32 simultaneous touch points, enabling multiple users to simultaneously interact with the video wall without affecting other users. The touch experience is accurate and intuitive, with excellent tactile feel and a smooth, anti-static surface.
- Superior image quality: Unlike glass panels, which can trap heat and reflect light, the Leyard LED MultiTouch features proprietary Leyard PLTS technology for an anti-glare surface that eliminates the distracting reflections that can occur in well-lit environments. The display delivers a crisp, high contrast image using the highest quality black LEDs and maintains uniform

color and brightness, even when viewed off-axis.

- Durable and easy to service: The Leyard PLTS touch surface material is extremely durable, protecting the video wall from damage that can occur from casual contact or debris getting on the display, while avoiding the heat that is commonly trapped in protective glass installations. The lightweight touch surface can easily be removed and then reapplied, making it easy to service. It is also straightforward to clean, requiring only a simple cleaner and cloth.
- Fits almost any environment: The Leyard LED MultiTouch is light-weight, thin and unobtrusive, making it ideal for almost any environment since it does not dramatically affect the mounting depth of the video wall.



www.leyard.com/LEDMultiTouch

LIVEU

LU600 Portable Transmission Unit With HEVC

Exceptional Performance, Exceptional Speed

The LU600 is LiveU's powerful new portable transmission unit for global newsgathering and live sports and events coverage. Integrating the LU600, the world leading professional bonding unit, with the most advanced HEVC hardware-



based encoder allows professional broadcasters to gain extreme efficiencies: delivering live video streaming over the most advanced, low power, small form-factor cellular bonding unit in the market.



liveu.tv/lu600

LIVEU

LiveU LU710 Hybrid ENG Vehicle

4K HEVC Adaptive Video Uplink System for Vehicles and Fixed Locations

The LU710 incorporates powerful HEVC encoding and 4K video resolution, giving sportscasters and news teams broadcasting from hybrid ENG trucks and fixed installations the highest quality video available today. The hybrid ENG vehicle solution increases

network reception for resilient live HD video transmission on-the-go while wirelessly connecting any LiveU pack to a LiveU Xtender antenna solution and satellite with distances of over 1,000 feet within line of sight.



liveu.tv/products/encoders/lu710

LOGITEK ELECTRONIC SYSTEMS

Helix TV Audio Console

A New Approach to Management of Broadcast Audio

Helix TV represents a new approach to the operation of audio broadcast consoles. It incorporates the latest multi-touch technology along with a suite of familiar controls to offer easy, yet fully customizable operation. The world has become accustomed to the use of touchscreens. Whether they are in your mobile phone, on a tablet or part of your automation system, touch devices have become the norm for running applications and making menu choices. Younger operators at your station have literally grown up with these devices. Logitek's Helix TV combines the best of the multi-touch world — offering simple menu selection and easy screen operation — with the convenience and easy operation of traditional controls such as large physical buttons and smooth faders. The result is a console built for the “touch generation,” but with easily accessed physical controls that your experienced operators will demand.

Helix TV is designed to provide full broadcast functionality in an affordable, compact form. It is available in sizes ranging from six to 36 faders, with fader layers available for system expansion as needed. Each Helix console includes a Monitor module and an HDMI output which allows for connection of a separate touchscreen meter or control bridge. Modules can be mounted in a single or split desktop frame. Touch-sensitive faders are motorized for seamless integration with program automation systems, audio routers and edit systems; they will also automatically track settings made by operators who are running the system remotely.

Each Fader module in Helix TV contains a 7” IPS touchscreen that provides context-sensitive function access; six motorized faders with touch-sensitive fader caps; layer change functions for access to virtual fader banks; large ON and OFF buttons with LED RGB-assignable colors; bus assignment for Program and four to eight AUX busses; and direct access to CUE. Metering indication for

each fader appears above the fader on the touchscreen panel. The Monitor module also contains a 7-inch IPS touchscreen with context-sensitive function access; four Sub Master gain faders; Control Room monitor fader; Studio Monitor fader and PFL cue fader.

For highly visible metering and access to commonly-used settings,



Logitek's vMix Touch application brings these functions to a standard touchscreen panel which can be located in any convenient spot in the studio or edit suite. Powered by Logitek's JetStream Plus AoIP platform, Helix TV offers all of the functionality needed for smooth, efficient operation. Twenty-four mix-minus busses are available which automatically track their assigned sources, no matter where those sources appear on the console. Integration with program automation control systems such as Ross Overdrive and Sony ELC is done easily and allows these systems to assume full control of the console. The JetStream Plus and Helix TV also provide insert points for connection of automatic mixing systems such as those made by Dan Dugan Sound Design.

With Helix TV, “Console Meets App.”



LUMENS INTEGRATION INC.

VC-A50P HD PTZ IP Camera

The Camera Has Power Over Ethernet, HDMI and 3G-SDI Synchronous Outputs



The VC-A50P HD PTZ IP camera is equipped with a 1/2.8-inch images sensor and 1080p/60fps. The superior 20x optical zoom lens, excellent white balance and exposure mode delivers a clear image. It supports live broadcasting with MJPEG, H.264/SVC format and low latency less than 120 ms. These features provide the best image quality and the camera is compatible with all video equipment. This technology can decrease hard disk space when recording video on a separate device. The VC-A50P supports stereo audio input and AAC encoding transmission through the internet to extend the distance of the audio device. Through this transmission, sound quality is enhanced and installation costs are reduced. The camera settings and PTZ control functions can be performed remotely at any location and at high communication speeds via the RS-232/422 interface. The VC-A50P supports low-latency and the fast response time is less than 12 ms that allows unnoticeable delays between live image feed and its output on the screen. The camera is applicable for every type of application.



www.mylumens.com

LYNX TECHNIK

greenMachine® titan Signal Processing

greenMachine Hardware Are Processing Platforms That Host APPS

Full functionality of the greenMachine titan is designed and built by the user stringing together APPs from the LYNX greenStore®. APPs are modular and function-specific and can be mixed and matched to reconfigure greenMachine to suit virtually any application. As new APPs will be constantly added to the greenStore, this enables the hardware investment to be easily adapted into new applications as required... making greenMachine truly future-proof.

greenMachine titan is a four-channel hardware device that complements the existing greenMachine callisto, a two-channel signal processing hardware appliance. Bearing the same footprint as the greenMachine callisto (1U high x half 19-inch rack width), the greenMachine titan simultaneously processes four 3G/HD/SD-SDI video streams or a single 4K/UHD video input. It offers up to 12G processing support (3840 x 2160 @60 Hz) and also provides the functionality to convert between single-link 4K video (12G) and quad-link 4K video (4x3G).

Titan and all greenMachine hardware are compact self-contained general purpose A/V processing platforms designed to host a wide variety of applications or APPs. And now with the 12G capable processing, greenMachine helps to facilitate and support 4K infrastructure applications. The APPs available that support both the 4x 3G-SDI and 12G processing provide high-quality and robust audio and video processing.

greenMachine was introduced globally at IBC and is a completely new concept adopting a three prong approach to product definition and function. Rather than being a fixed application specific box, greenMachine is a combination of general purpose hardware, downloadable APPs for customizable functionality and powerful control software.

With greenMachine, the industry has a way to reimagine its approach to purchasing, upgrading and building a foundation of signal processing solutions for any broadcast or professional video application.

How does greenMachine work?

Users configure and customize the greenMachine hardware for the functionality needed by downloading APPs from the LYNX Technik greenStore. APPs can be mixed and matched to reconfigure greenMachine to suit virtually any application. As new APPs will be constantly added to the "greenStore," this enables the hardware to be easily adapted into new applications, future-proofing your investment. APPs are pur-



chased through the greenStore and are all available on a try before you buy basis.

greenMachine can be as straightforward as a standalone appliance with a few APPs, to a complex system with multiple units networked together all over the world.

Being fully APP driven the greenMachine® titan will enable a smooth transition from an HD world to a UHD world for broadcasters: they can use titan today in their 3G infrastructure and upgrade to 4K-12G with the click of a mouse when they need it.

A wide variety of plug-in fiber options for SDI and Ethernet connectivity for greenMachine are available including simple point to point connections to multiplexed bidirectional CWDM applications with up to 18 wavelengths.

The greenMachine titan hardware comes with a fully featured local control interface with an LCD which displays image previews and audio level meters of the processed video paths in addition to the graphical user interface.

green-machine.com



MAGEWELL ELECTRONICS

USB Capture Plus Video Capture Devices

Professional Capture Power Up to 4K With Plug-and-Play Ease of Use

Magewell's feature-rich USB Capture Plus external video capture devices enable all types of computers including laptops to capture professional video and audio signals through a standard USB 3.0 interface, with no additional power source required.

Building on the powerful functionality, quality and reliability that have made Magewell's previous-generation USB products the preferred choice of video professionals, system integrators and high-end hobbyists, the cost-effective new USB Capture Plus models add even more professional features including signal loop-through, expanded audio support, and full-resolution 4K capture (up to 4096x2160, including 3840x2160 Ultra HD) on select models.

Featuring a driver-free design and automatic input detection for true plug-and-play operation, the devices support Windows, Mac and Linux operating systems and offer broad compatibility with popular streaming, encoding, live production, collaboration, video conferencing, medical imaging and lecture capture software.

The USB Capture Plus series includes FPGA-based video processing, providing high-quality deinterlacing, up/down conversion and image controls while maximizing host system CPU availability for third-party software — particularly significant when working with the quadrupled resolution of 4K video.

Five USB Capture Plus models offer a flexible choice of input connectivity and capture resolution.

The USB Capture HDMI Plus captures video up to 1920x1200 or 2048x1080 at 60 frames per second over its HDMI 1.4 interface, while the USB Capture HDMI 4K Plus also supports 4K inputs up to 60 fps via HDMI 2.0 connectivity, capturing them at 30 fps. The USB Capture SDI Plus cap-

tures video up to 1080p60 over its 3 Gbps SDI input, while the USB Capture SDI 4K Plus captures 4K video at 30 frames per second via 6 Gbps SDI. 4K inputs with 4:4:4 or 4:2:2 color sampling are automatically converted to 4:2:0 for full-resolution capture in the NV12 or I420 color space formats, to fit within the bandwidth available in the USB 3.0 standard.

All HDMI and SDI USB Capture Plus models offer loop-through connections, reducing workflow costs and complexity by enabling source signals to be sent simultaneously to additional displays or equipment without the need for external splitters or routers. This cost-effective convenience combines with the devices' rich feature set and extensive compatibility to make them ideal for both end-user applications and as "glue" solutions for systems integrators implementing complete infrastructures.

The fifth model, the USB Capture DVI Plus, can capture video up to 1200p60 through its DVI interface, with automatic down-conversion from inputs up to 2048x2160. The DVI model can also capture HDMI sources, as well as VGA or component analog video signals, with the use of simple adapters.

HDMI or SDI embedded audio support is complemented by additional audio inputs and outputs for capture and monitoring: line-level analog input and output connections on SDI and DVI models, and an analog microphone input and stereo headphone output on HDMI configurations. FPGA-based audio processing featuring ASRC technology delivers superior USB audio handling, while the included USB Capture Utility software gives users advanced control of processing settings and access to detailed status information.

Magewell's USB Capture Plus external capture devices — the ideal solutions to capture your future.



www.magewell.com/usb-capture-plus-family

MARSHALL ELECTRONICS

AR-DM61-BT Multi-Channel Audio Monitor

64 Channels of Versatile Audio/Video QC & Conversion Packed Into 1RU

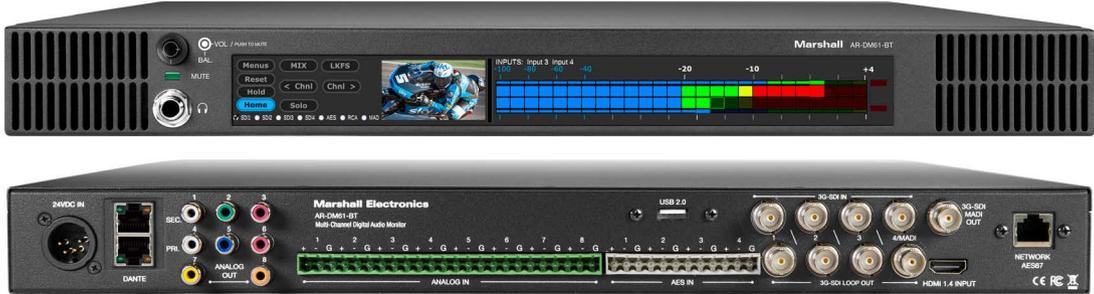
Experience versatile audio analysis functions, flexible matrix conversion tools and a pair of powerful speakers packed into 1RU with the new Marshall AR-DM61-BT Multi-Channel Digital Audio Monitor. The AR-DM61-BT is a powerful audio/video QC solution designed specifically for TV stations, broadcast trucks, transfer stations and house of worship facilities.

Marshall consulted directly with broadcast engineers and systems integrators to develop a practical and flexible solution that packs versatile audio analysis functions, flexible matrix conversion tools and a pair of powerful (~100 dB) speakers into a single rack unit (1 RU). The first audio rack unit with an intuitive 10 inch wide LCD touchscreen in the industry, the AR-DM61-BT can display up to 64 audio channels from multiple signal types and includes a built-in live video preview confidence monitor.

The AR-DM61-BT supports four dedicated 3GSDI inputs with loop-through (one MADI compatible), one HDMI input, eight balanced analog audio inputs, four stereo AES inputs and eight channels RCA output. Cleverly designed sealed speaker enclosures maximize output in a small form factor for use in noisy control room environments where economic use of rack space is crucial.

Planned software upgrades and optional hardware extension ports enable the AR-DM61-BT to serve as a “future proof” solution that will evolve with the ever-changing requirements of the broadcast A/V industry. Additional features include support for the latest Dolby™ formats, Dante™ networked audio technology and a built-in web server for storing and retrieving presets.

The Marshall AR-DM61-BT debuted at the 2017 NAB Show, with scheduled release in Q3 2017.



MARSHALL ELECTRONICS

OR-185-3GSDI Master Confidence Monitor

Powerful Broadcast Production & Analysis Tools Packed Into an 18.5" Panel

The Marshall OR-185-3GSDI includes a range of professional production and analysis tools packed into an 18.5-inch best-of-breed IPS panel. As a master confidence monitor for broadcast control rooms, transfer facilities, and production editing areas, the OR-185-3GSDI has been designed to offer the features and reliability required for mission-critical applications; all day, every day.

The latest offering of the premier Marshall ORCHID® Series monitors, the OR-185-3GSDI builds upon a legacy of offering unmatched reliability, versatility and after-sales support that goes above and beyond similarly priced products in the market.

The OR-185-3GSDI includes built-in waveform, vectorscope, histogram, and 3D monitoring functions along with robust audio analysis tools. The OR-185-3GSDI can de-embed and display up to 16 channels of audio across sixteen 64-segment tri-color meters with user-adjustable reference levels. The audio level meter display can also provide numerical indicators, peak hold, and channel-loss warning alerts.

The OR-185-3GSDI comes standard with two auto-sensing 3G-SDI inputs, DVI-I, VGA, and analog inputs. This unit can be used as a portable stand-alone monitor equipped with front panel stereo speakers, integrated carrying handle, and desktop stand. An optional rack mount kit with tilt capability is also available.

The OR-185-3GSDI incorporates convenient front-facing controls, including seven user-assignable function keys and four rotary knobs for simple access to various monitor settings and functions. Analysis functions and measured data graphics are displayed as overlays to maintain

original footage. Additional display options include full screen views of the waveform, vectorscope and audio metering data.

Other advanced features include 3D review, anaglyph 3D views, side-by-side 3D, false color mapping, clipguide, color peaking filter and more.

The Marshall OR-185-3GSDI debuted at the 2017 NAB Show, with scheduled release in Q2, 2017.



www.lcdracks.com

MASSIVE INTERACTIVE

Massive AXIS

Massive Redefines Online Video Ecosystem With Video Merchandising Platform

The new video merchandising functionality presented in the Massive AXIS platform allows broadcasters, telcos, studios and other content providers, to offer an unrestricted number of different targeted user experiences to specific user groups, across every consumer device used in today's video service universe.

Tier 1 organizations including BritBox (BBC and ITV in the U.S.), Channel 5 (U.K.), Lionsgate (U.S.), Sony Pictures Television (Global deployments across U.S., Latin America and Asia) and Bell Media (Canada) have adopted the Massive AXIS platform to shape the future evolution of their video offerings.

The platform offers the perfect approach to differentiating any SVOD, TVOD, AVOD (or combined), multi-device video service in an increasingly competitive market. This merchandising extension to Massive AXIS gives operators (for the first time) the ability for advanced management of appearance and catalogue — including live linear feeds — in real time.

This original toolkit is a timely response to the proliferation of apps that have forced online video service operators (OVSOs) to accept inflexible deployment and content merchandising strategies. Operators have traditionally produced apps by device, but this has made the concurrent distribution of new features across all platforms incredibly painful and slow due to the number of people that need to be consulted to make a small change to the way content is delivered or presented.

With current approaches failing to give OVSOs the flexibility they need to adapt their content and UX rapidly to meet business goals and increase revenue, many OVSOs have come to think of the app simply as a means of allowing customers to access the videos they provide, rather than as a tool to maximise the value and lifetime of each piece of content.

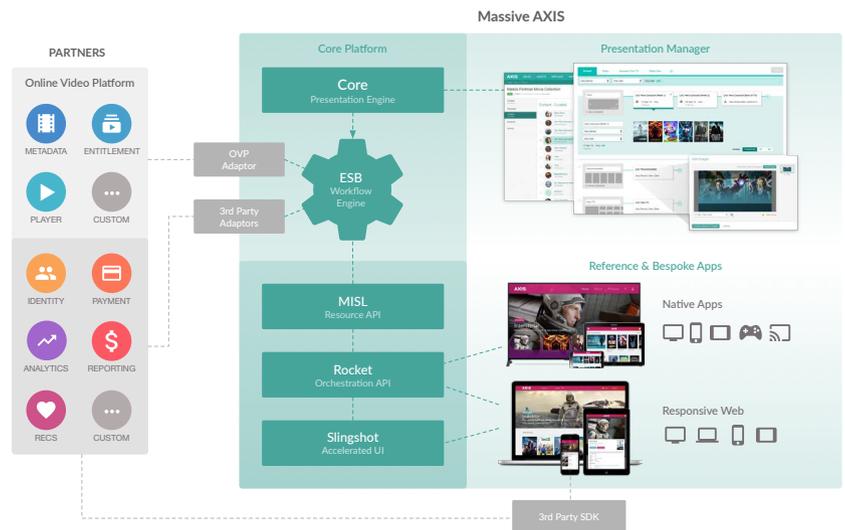
Massive AXIS is now empowering OVSO's to shift their mindset and use the video app as a "store," the place where the merchandise meets the customer to boost engagement. The real-time capabilities of the Massive AXIS video merchandising platform empowers OSVOs to quickly and efficiently tailor their full library of content, ensuring each video is presented at the right time and on the right device.

The solution has three major new elements that deliver real-time capability:

Segmentation Tags

The brand-new segmentation feature in Massive AXIS enables video service operators to create and deliver an infinite number of unique user

experiences to distinct audience groups. This sets a new industry benchmark for personalising experiences and provides unmatched versatility to respond directly to A/B testing and audience behaviour. The segmentation tags can come from many sources including subscriber profile and even third party sources to include elements such as age, gender, viewing habits, or geolocation.



Enhanced List Management

The Massive AXIS list management feature makes it simple to generate new collections from a video catalogue based on cast or crew, release date, keywords, expiry and more. With live inline visual previews and the versatility to add premium imagery and metadata, video service provider owners are now supercharging their catalogs and curating like never before.

Enhanced Live / Linear Management

The enhanced live/linear management features in Massive AXIS enable video service operators to manage Live Channels and EPG metadata. With the ability to add linear schedules to any video asset, and schedule a broad range of Live and EPG components, video service providers can now curate truly content-centric experiences that seamlessly blend live and on-demand.

MILLER CAMERA SUPPORT LLC

Skyline 90 Fluid Head

Designed for the Challenging Environments of Outside Broadcast

Created in conjunction with the Ronford Baker Engineering Co., the Skyline 90 Fluid Head is designed to meet the stringent and rigorous standards presented by challenging environments and condition of outside broadcast (OB). The Skyline 90 supports payloads of up to 165 pounds (75 kg.) and features robust all-alloy construction.

The Skyline 90 has a continuous counterbalance control knob that ranges from zero to 165 pounds (75 kg.) at 12 inches (30 cm.) above the center tilt axis for precise adjustments during any OB shoot. It also features 15+0 selectable fluid

pan-tilt drag positions to ensure the optimum drag for any lens focal length. With a sliding platform featuring 300mm of sliding range that glides smoothly and effortlessly with a full payload, the Skyline 90 easily balances heavy camera loads. It also comes with an auto safety lock to ensure a secure horizontal position when loading or dismantling heavy box lenses. The floating calliper pan and tilt locks with large metal levers can be operated simultaneously with one hand without causing picture disturbance. Two bubble levels located at either side of the head allow for convenient leveling.



www.millertripods.com

MULTIDYNE FIBER OPTIC SOLUTIONS

VB Series

VB Series Breaks the Paradigm for Signal Density, Granularity & Flexibility

MultiDyne's focus on adaptability across any fiber transport scenario breaks new ground with the VB Series, a configurable, high-density platform engineered to meet virtually any connectivity requirements.

The highly durable, compact VB Series is based on a common platform that is built to order from a diverse array of modules across video (including 12G and 4K), audio, genlock, timecode, GPIO, tally, serial data and Ethernet. Based on the model selected, the miniature card cage can house up to 18 cards, with options that include single- and dual-channel video; as well as 4x4 audio. Based on the customer's architecture, the VB Series can support either proprietary MultiDyne cards or interoperate with openGear modules cards — the latter of which provides the added benefit of SNMP-based openGear DashBoard monitoring.

The thoughtful engineering of the VB Series reduces production and delivery time. Instead of requiring a purpose-built product to meet a customer's connectivity requirement, MultiDyne engineers can discretely test each module, and configure them into a finished product configuration for shipping within one week or less. This flexibility will also allow MultiDyne to build in future modules that extend beyond fiber transport and into conversion, including HDMI-to-SDI video; and AES-to-analog audio (and vice versa in both cases). Additionally, the platform will evolve to accommodate UHD scaling and signal conversions as the series expands, including conversions of 4K quad-link input signals to 12G and HDMI at the output.

The VB Series' flexible design also offers unparalleled adaptability to the specifications of new camera models as they come to market. Several VB Series models already perfectly adapt to signals types and counts on POV and robotic PTZ cameras from Blackmagic Design, Canon and other manufacturers, ensuring a fiber transport solution that works right out of the box.

The compact VB Series architecture (7.25x5.75x1.75 inches) means it can easily be mounted to POV box cameras and robotic PTZ heads, with models a platform initially supporting between 16 and 1224 fiber transport connections for video, audio, data and Ethernet. Along with the ability to

transport a full complement of multichannel camera signals, including 4K quad-link and 12G, optional supply power from the base unit can be sent to the transmitter and camera via SMPTE hybrid cable. This enables flexible setup, strike and mobility by ensuring the entire camera position is free of power outlets.



The flexible mounting solutions extend to rack-mounting (such as on a mobile product truck or a temporary studio) and wall-mounting. The latter can be especially useful in sports production, where a receiver can be installed behind a display screen to show live feeds from throughout the venue. However, the VB Series is also built as a rugged throwdown unit that can be positioned anywhere in the field for live content acquisition and transmission back to the receive site. Its exceptional bandwidth accommodates SDI rates from 5 Mbps all the way up to 3 Gbps (1080p) 12G uncompressed, making the VB Series ideal unit for mobile production trucks and other customers that need to trunk multiple uncompressed SDI signals over fiber.

MultiDyne's intensive research, development and engineering efforts laid the foundation for the VB Series. A great deal of research and development was put into module configurations and functionalities, along with a detailed testing process to confirm operability of each design and specification. Along with end customers, MultiDyne's reseller network can count on optimal reliability and performance for each module based on the rigorous testing and confirmation process for quality assurance.



www.multidyne.com

NET INSIGHT

Nimbra VA 225 Four-Channel Encoder/Decoder

Combines Advantages of an MPEG Encoder/Decoder With Internet Transport

Net Insight's Nimbra VA 225 is a four-channel encoder and decoder that enables users worldwide to extend their business using the Internet as transport. Designed from the ground up to secure vital traffic from being tampered with by untrusted third parties, other features include advanced video monitoring, and versatile connectivity options.

By leveraging the internet as a transport network, users can gather content from a multitude of sources at a cost point that was previously unattainable. This opens a whole new market with the ability to produce content, which was previously unimaginable. For example, tier two and three sports, junior leagues, fashion shows or other local events. Because the content is already in MPEG format, users can choose to send this straight to their CDN for distribution resulting in a

truly cost efficient end-to-end chain.

Nimbra VA 225 effectively bridges the networks of the past with the support for ASI interfaces, to the networks of today with SD, HD, and 3G-SDI. The technology also supports future video formats such as SMPTE 2022-6. Using a powerful combination of multi-purpose ASI/SDI ports, and up to 10 Gigabit Ethernet, provides full flexibility.

Allowing customers, applications and workflows to provision and monitor network services themselves provides a level of flexibility never experienced before. Customers provisioning their own services through an online self-service portal increases network usage and reduces provisioning effort and cost to zero. Having live and file-based workflows automatically request transport capacity where and when needed finally enables true media workflow agility.



netinsight.net/product/nimbra-va-225

NET INSIGHT

Sye True Live 360° OTT Streaming Solution

The World's First True Live and Synchronized 360° OTT Streaming

Introduced at the 2017 NAB Show, Sye 360° is the world's first true live and synchronized 360° OTT streaming solution. With ultra-low latency, broadcasters can synchronize a live OTT feed with the linear broadcast, making it possible to offer second screen companion content that integrates seamlessly with the first screen experience. Combined with Sye, instant channel swaps and ABR level changes, these features constitute the foundation for an affordable, high quality, 360° OTT live streaming solution, ready for the masses.

Any broadcaster wanting to offer new 360° experiences will face challenges to maintain a good quality of experience. The biggest one being the network challenge. Most users' home network capacity is limited and does not suffice when it comes to providing a good quality 360° stream.

Additionally, most 360° applications, particularly for sports, are as a complementary feed to the linear broadcast, requiring harmonization of the 360° feed with the linear broadcast for a seamless user experience. This puts tight demands on low delay and synchronization of the OTT delivery, demands no alternative OTT solution on the market has been able to meet, even without adding the 360° viewing.

Net Insight's live 360 streaming solution, Sye 360°, meets both these challenges, Sye, the world's first live OTT solution, delivering frame-accurate video and audio synchronized across any device.

At its core is an award winning, low-delay Adaptive Bit Rate (ABR) technology. Sye 360° utilizes this ABR technology together with focal point streaming and Sye instant channel change technology to achieve a seamless and highly effective 360° streaming. Each 360° stream is divided into separate views where each view has a different focus area, all views combined covering the full 360°. In each view, the focus area contains the highest picture quality and the further you move from the focus area towards the edge of the view, the lower the picture quality becomes. For fast moves inside the 360° sphere, Sye takes advantage of its channel change technology to maintain an exceptional QoE.

The results show up to 50% bandwidth savings, while maintaining high QoE for the viewers. In addition, Sye 360° has configurable fixed latency, making it possible to harmonize the stream with the broadcast feed over traditional platforms, such as DTH or cable TV. It is now possible to offer 360° companion content that integrates the second screen seamlessly with the first.



Sye 360° leverages Sye Streaming Services enabling operators to re-use existing transcoding investments and to lower bandwidth requirements in the last mile to the home. The broadcast quality end-to-end solution combines live stitching, transcoding, and contribution adapted for home WiFi networks. Since Sye 360° provides the same experience to everyone at the same time, broadcasters and rights holders might create an app combining Sye 360° with voice or chat functions to integrate with social platforms, augmenting the interactive experience.



netinsight.net/liveott

NET INSIGHT

Net Insight's Connector Marketplace

The Connector Marketplace Enables Streamlined Planning Online

The Connector Marketplace is an online cloud-based platform designed to allow participants to share service offerings, inventory and resources in real-time. This platform optimizes and streamlines the process of mixing in-house and external resources.

At this year's NAB Show, Net Insight showed cloud-based media production services in the Connector Marketplace. This enables broadcasters and production companies to plan its workflows, including cloud and third party resources. The benefit for the companies is to be able to fully integrate these resources into their existing workflows.

Working with cloud-based media production services/cloud service providers, Net Insight will offer true cloud service orchestration, with the ability to enable the buying and selling of cloud-based media production resources. The marketplace is capable of including a variety of media resources, or "microservices" such as:

- Transcoders/encoders
- Subtitling
- Media Analytics
- Streaming
- Editing
- Production

The Connector Marketplace supports both basic and advanced resources including cloud-based media production services. In the future, the Connector Marketplace will even include advanced combined services packages — for example an OB van with production equipment and a satellite uplink for an event as well as cloud transcoding and live streaming to various platforms.

Net Insight's Connector Marketplace is a global online media marketplace to easily book and exchange services and resources in real-time within your planning tool. The platform is used by professional media with more than 300 installations. It allows one-click seamless cloud service integration using Net Insight's ScheduALL. It streamlines the process of mixing in-house and external resources, enabling a seamless and smooth transition as participants use cloud services to supplement resources.

For subscribers, it provides them access to external resources with full financial visibility and project billing. Not only can they view and book current inventory, but also book services and deploy services in seconds during peak times with full cost control and analysis. For service providers, it delivers a high-profile marketplace to promote available services and resources to the industry, manage the continuity of inventory, and maximize the return on their own resource investment.

Over the years, Net Insight's ScheduALL has built trusted relationships with the largest media businesses, and the Connector Marketplace unifies these companies. New service providers continue to join the community.

A key differentiator for the Connector Marketplace it is a one-stop-shop for adding cloud services within the workflow. It is tied to scheduling, within the scheduling process letting users pick and choose to add what they need each step, controlling and maintaining the workflow and expenses within the end-to-end process.



netinsight.net/product/scheduall-connector

NEULION INC.

ACE Analytics — An OTT Analytics Tool

Leverage Real-Time OTT User Data to Drive Effective Business Outcomes

NeuLion ACE Analytics leverages real-time OTT consumer watch, user, and support data, all generated by the NeuLion Digital Platform, as content is delivered to internet connected devices.

The NeuLion Digital Platform is an end-to-end solution that provides digital video broadcasting, distribution and monetization of live and on-demand sports and entertainment content to any connected device.

ACE Analytics is a significant value-add for NeuLion customers, who will gain sharper insights and real-time data to stay competitive and grow their OTT business by enhancing subscriber loyalty, retention and data insights. ACE was designed to help our partners answer key questions regarding their OTT and TV Everywhere services: What are my most effective and profitable marketing channels and campaigns? Who are my most valuable viewers and how do I find more of them? Who is likely to cancel and how can we keep them? How do I get users from free to paid?

NeuLion created a suite of easy-to-use, interactive, and customizable dashboards to provide enhanced measurement for unlocking increased conversion rates, consumer loyalty, and lifetime value. Key dashboards include the following:

Orders and Registration

Acquire a deep understanding of registration trends to help activate marketing campaigns and convert audience development initiatives. Granular user-level data for any segment can be exported and used to exploit automation, trigger based messaging and more.

Lifecycle Management

Maximizing engagement early in the viewer relationship is crucial to increase lifetime value. Reducing latency between registration and first engagement results in improved revenue generation outcomes. Consumer value decreases as latency sustains. Here we offer a snapshot of potential trigger points when users reduce the amount of content they are watching, an early warning on possible churn.

Multi-Screen Usage

Learn where viewers are spending their time and correlate the number of devices used to long-term retention. This is crucial in the OTT era as entertainment experiences become increasingly dynamic and replete with viewing choices. The more devices a user is consuming media on, the higher the lifetime value.

Programming Effectiveness

Measure programming across key measures of consumption and begin to understand and leverage consumer preference, a key ingredient for informing programming strategies and marketing campaign support.

Video Usage Trends

Examine consumption by month and channel to gather information around seasonality and create tactics to increase viewing. Determine which channels are driving the most usage and how much content viewers consume during specific periods.

Revenue

Measure the bottom line with YOY comparisons and forecasts. Determine which offers were the most successful and identify programming and marketing tactics that increase revenue. Understand how device mix is driving growth and which devices are lacking.

Churn Trends

Assess drop off points in the consumer lifecycle and improve user retention. As fans consume media on multiple devices we can discern which devices lead to the greatest drop-off. This informs product decisions to enhance viewer experience or target customers with specific campaigns. The more devices a user is on leads to high retention and lifetime value.

NeuLion's long-term goal is to empower its customers to develop and publish views unique to their business model that lead to improved audience measurement and incremental revenue opportunities.



NEWSMAKER SYSTEMS

NewsCaster Control Live News Automation

Live News Production Completely Driven by the Newsroom Rundown

For a fraction of the cost and complexity of today's outdated live news production automation solutions, NewsCaster™ Control completely replace the workflow, operation and on-air results of legacy live news production systems. NewsCaster Control provides the bridge between professional MOS enabled newsroom computer systems and the NewTek IP Series and TriCaster™. Driven in real time by the newsroom rundown, NewsCaster Control enables newsroom systems to be totally in control of all live news production elements.

NewsCaster Control uses the MOS protocol to link the TriCaster and IP Series to the world's most widely used professional newsroom systems (NRCS) including Avid iNews, AP ENPS, Octopus, ANNova OpenMedia and Ross Inception. NewsCaster Control integrates scripted MOS assets in the NRCS rundown with the TriCaster and IP Series. An Active-X plugin is provided in the NRCS workstation interface for the selection of video and audio clip thumbnails, and creating templated graphics. This provides total access to all of the TriCaster and IP Series assets and capabilities, using the industry standard MOS protocol workflow. Graphics are created with text entered into the CG templates, WYSIWYG thumbnails of the finished graphic are presented in the client workstations for preview.

All news production elements including the completed CG's can be placed directly into the newsroom rundown as the scripts are written. Real-time monitoring of assets including clips and CG "ready" and "missing" status is available in the NRCS interface rundown, and with the NewsCaster control room UI monitor.

NewsCaster Control takes user-defined event sequences called NewsCaster NewsStyles™ and applies these NewsStyles to different combinations of scripted elements. NewsStyles create unlimited combinations of rundown elements, and enable the total control of the IP Series and

TriCasters built-in transitions, effects, audio, IFB, graphics, clips, routing, virtual sets, dual, triple and quad boxes, robotic camera control, and limitless numbers of NDI I/O sources. Typical but complicated news sequences can be quickly defined and entered into the rundown. A sequence such as "On camera with OTS and lower third name CG, to VO-SOT with locator,

dual box remote intro, live remote with name and locator, SOT with CG's, out to live remote with name, dual box, then center two shot", can simply be selected with a few drop-down selections.

Once the rundown is built with all of the NewsStyles and the show is ready to go, all event sequencing is driven by the NRCS rundown. Any asset changes in the on-air rundown like adds, drops, holds or floats are instantly inserted, deleted or moved, then re-ordered in the IP Series and TriCaster media bins, with no operator intervention required. Breaking

NewsMaker



news pre-sets and manual overrides are always available for last second newscast changes.

NewsCaster Control includes a powerful UI with full production capability, thumbnails and timers for clips, integrated on-screen shot box, and virtual flying faders for audio control. Also included are an external pre-programmed shot box, and a 16-channel audio controller with 8 flying faders. The entire live news broadcast can be operated from the traditional TriCaster or IP Series control surface, or with the NewsCaster Control UI, just the shot box and audio controller, a standard keyboard and mouse, or any combination of these interfaces.

With live broadcast news installations from New York to Prague, newsrooms of every size and budget are using NewsCaster to produce their live 24/7 news broadcasts. NewsCaster Control, with the IP Series and TriCaster, gives control of live news production back to the newsroom.



NEWTEK

TriCaster TC1 — 4K IP Video Production

The First Affordable End-to-End 4K IP Video Production System

TriCaster TC1 is the culmination of more than a decade of IP video experience for live production, with uncompromising support for 4K UHD switching, live streaming, recording, data-driven graphics, virtual sets, social media publishing and more. Continuing innovation around the iconic product that has defined an industry, TriCaster TC1 supports 16 external inputs of up to 4K UHD 60p resolution without sacrificing functionality. Powered by NewTek's NDI™ technology for IP-based workflows, TriCaster TC1 also offers multiple studio-grade Skype TX channels for adding remote video guests to live shows.

IP Makes 4K A Reality — Today NewTek's software-driven, IP-native approach to 4K eliminates the need for conversion to and from baseband video, allowing all integrated features including video playback, mix/effect busses, keying layers, and streaming to be 4K-capable without limiting the number of available resources. TriCaster TC1 has 16 inputs available, regardless of video resolution.

Live Streaming and Publishing of Recorded Content — With the explosion of online and mobile video, broadcasters and content producers need a way to stream live and encode/publish video to social media quickly and easily. Whether you need to go live for breaking news or post recorded video clips that viewers can see on demand, TriCaster TC1 handles it all. Users can stream directly to Facebook Live, YouTube Live, Microsoft Azure, Periscope, Twitch, and other streaming sites, or deliver video clips directly to social media sites right from the TriCaster TC1 interface.

The Most Complete Solution — It's not just the ability to deliver content that makes TriCaster TC1 so special. It is truly a production powerhouse with an unbelievably rich feature set that typically requires 4 or 5 other devices to accomplish in traditional baseband video workflows. With built-in video servers, macro automation, advanced chroma-keying, ISO-recording, replay, and more, TriCaster TC1 ideally suits broadcasters, sports, esports, educational organizations, corporate

entities, houses of worship, event producers and digital video teams looking to get the most production power with high-quality content delivery in a single system.

Integrated Skype TX — A new feature with TriCaster TC1 is integrated multi-channel Skype TX integration. NewTek is the only company to offer this functionality in a live production system in the world. Any one of the TriCaster TC1's 16 external inputs can be designated for live,



broadcast-quality Skype video calling, giving producers the capability to reach any one of the 300 million monthly active users of Skype and deliver a pristine HD video call with balanced audio. With studio-ready call control from an external laptop or workstation running the Skype TX controller application, calls can be configured and monitored without impacting the TriCaster TC1 operator's workflow. Other active call channels from NewTek TalkShow® systems can be managed from the controller for additional call capacity and streamlined management.

A World of Connectivity — Like its predecessors, TriCaster TC1 is an integrated solution, however, TC1 is also very capable of connecting to the bigger IP universe. With native integration of NewTek's NDI™ technology, TriCaster TC1 connects to the most prolific IP-based ecosystem in the industry, networking seamlessly with compatible products from hundreds of manufacturers and developers. This means that many connections to both NewTek and third-party products from TriCaster TC1 will be direct via IP without any baseband video connections.



www.newtek.com/tricaster/tc1

ONETASTIC

MULTITASTIC C2 VHF 7+1 ATSC Transposer

Unprecedented Processing Engine Powers 100W 7+1 VHF Channels in 4RU Chassis

Turn spectrum repacking into an opportunity.

ONeTastic unleashes the full potential of VHF Band, at a fraction of the cost you can expect from traditional equipment. ONeTastic MULTITASTIC C2 shifts paradigm in multichannel ATSC transposers and transmitters.

Up to now, the simultaneous rebroadcasting of seven separate ATSC channels on the VHF Band from the same site implied a nightmare of receivers, modulators, power amplifiers, channel filters and combiners. Now, ONeTastic MULTITASTIC C2 wipes all that stuff away from your sites.

Into a single, integrated 4RU chassis, ONeTastic MULTITASTIC C2 combines 7+1 ATSC receivers (VHF and UHF) with individual RF input, 7+1 regenerative ATSC signal processors, exclusive signal processing engine and ATSC modulation stages, and 1+1 wide-band, ultra-linear “common mode” 100W amplifier capable to broadcast over the entire VHF band at the same time.

The revolutionary ONeTastic signal processing engine as first separately re-generates the signal received by each RF receiver, bringing it back to the cleanest level of MER. The MULTITASTIC C2’s processing engine then carefully applies a wise pre-correction to each of the regenerated signals, then maps each of them to the output level and output channel of choice. A revolutionary wide-band modulator combines all the signals into a single RF package as wide as the entire VHF band.

The processing engine then applies a powerful signal correction capable at the same time to both ensure the highest output MER at each individual channel and to get perfectly compatible shoulders’ edges and protection ratios for and between any channel at the output of the subsequent ultra-linear wide-band amplifying stages. The processing engine wipes off any mutual interference between signals, as well as

RF emissions in unwanted positions of the spectrum, allowing broadcasters to do without channel filters, requiring just a single band-pass filter for the entire VHF band to broadcast all the seven VHF channels.

ONeTastic MULTITASTIC C2 features a fully redundant power system, a fully redundant PA scheme, and the capability to automatically redirect any incoming signal to the “+1” bay, for

smooth and seamless operation.

No routing matrix at RF output stages: thanks to the revolutionary VHF “common mode” modulation and amplifier scheme, there is simply no need to combine anything, since the ONeTastic MULTITASTIC C2 efficiently combines all the signals while in the digital domain, generating a wide-band RF packet including all the channels to be broadcast. ONeTastic MULTITASTIC C2 enables the utmost level of flexibility: need to broadcast all the seven VHF channels? Just do it. Need less? MULTITASTIC C2’s modular design allows you to buy and install just the number of channels you need. At any later stage, you’ll be able to in-



install further modules to fit your evolving business, up to the 7+1 configuration within the same 4RU chassis.

Regardless of the number of channels in use, the ONeTastic processing engine will take care of fine-tuning the signals in order to always get the best performance and the best efficiency from the whole system. In any case, the output power can be individually set per each of the channels in use to fit compliance requirements.

ONeTastic MULTITASTIC C2 comes with dual redundant GPS receiver for the utmost frequency stability. Designed for last-mile applications, ONeTastic MULTITASTIC C2 perfectly suits also any low power broadcasting/rebroadcasting application. One or more channels (up to all of them) can also operate as pure transmitters, for mixed-mode operation.

www.onetastic.com



OYALA

Ooyala Flex Video Production and MAM Hub

Customizable Media Logistics Solution to Get Content to Market Faster

Ooyala Flex is a versatile and customizable solution for streamlining video production workflows and media asset management (MAM), designed to get content to market faster. This has become increasingly critical as legacy production software and processes have disparate teams and tools, complicating access to content, slowing production time, increasing human errors and making many processes redundant.

Ooyala Flex acts as a hub connecting all of the legacy tools and teams needed to produce, review, approve and manage every aspect of video content creation and delivery, from script to screen. Going well beyond traditional MAM capabilities, it's a media logistics solution that can automate production workflows, increase visibility into media operations, and create greater collaboration across teams. It is equipped with a range of features to ensure that users are able to create and deliver content to multiple audiences across any platform, all while reducing costs and complexity.

By connecting silos and automating processes and workflows, Flex customers gain real-time visibility across the entire video supply chain, enabling them to identify and resolve bottlenecks, increase collaboration across teams and regions, effortlessly manage business and asset data, access comprehensive analytics and insights and more.

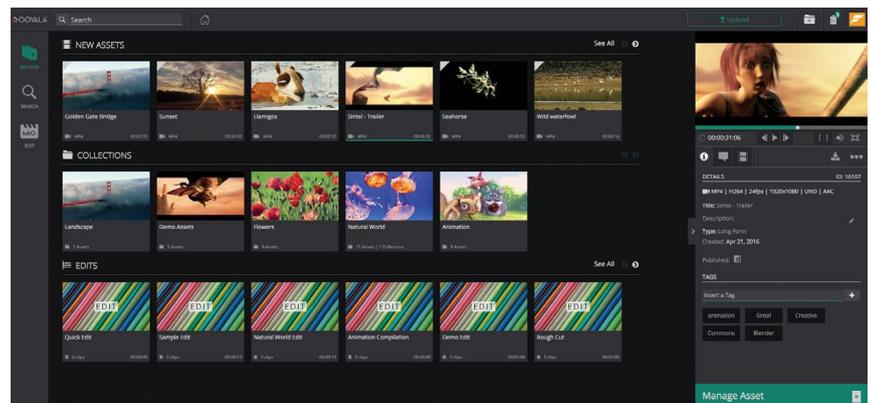
With full visibility, teams can track and measure crucial project information in real time to identify any existing issues and seek out opportunities for increased efficiency.

One of the platform's defining features is its ability to streamline processes without requiring customers to uproot their existing systems or infrastructure. Using simple APIs, Ooyala Flex acts as an integration layer connecting nearly any existing production system or software together, whether on premise or cloud-based. For example, this could include Adobe for editorial needs, Microsoft Azure for storage, along with a host of other commonly used solutions.

Ooyala Flex utilizes a micro-service architecture within the software, allowing every function of Ooyala Flex to be deployed independently with its own unique process, workflow and communication. Customers can run their own workflow configurations, host them using any provider they wish and grow and shrink services size based on peak or slow activity. The modern architecture also makes it easier to develop new features and services, and deploy quickly, either on-premise or in

the cloud, with minimal resources.

Ooyala Flex customers see significant time savings throughout their media operations, with some reducing project delivery times by more than 75 percent.



Use Case:

With Ooyala Flex, Sky Sports is able to deliver hundreds of Premier League in-game clips and highlight packages for online and linear consumption to more than 40 international licensee partners, all in a small number of minutes.

Once a notable event occurs during a live match, a Sky Sports production team is responsible for quickly creating the clip, inputting metadata and transferring the file into their cloud storage system. Once uploaded, Ooyala Flex automatically detects the clip, ingests it into the system and triggers a series of workflows that transform the clip into 20 different renditions. Once final, Ooyala Flex creates and delivers a number of unique packages, each with a subset of those 20 different renditions based on the preferences for every licensee partner, including the corresponding metadata. This process is repeated and automated every time Sky Sports uploads a clip into Ooyala Flex, occurring numerous times per game, with as many as six to ten games per day, multiple times a week with some games occurring simultaneously. This is a process that, if done manually, would require an immense amount of resources and hands-on work.

www.ooyala.com/products/media-logistics

PANASAS

ActiveStor NAS With DirectFlow for Mac

DirectFlow for Mac Lets You Focus on the Craft, Not the Storage

ActiveStor with DirectFlow for Mac is the first and only high-performance combination of scale-out NAS with a parallel data protocol for the Apple Mac platform and the macOS® operating system. The solution offers several advantages over traditional post production storage platforms. It deftly handles the challenge of many simultaneous users working in both large unstructured and mixed large- and small-file media workflows, for faster media ingest, process and delivery of HD and 4K UHD resolution projects. The solution's ability to scale bandwidth and capacity for larger high dynamic range (HDR) and virtual reality (VR) projects helps future proof the system as new media formats and more complex workloads are introduced. ActiveStor with DirectFlow for Mac unifies all Macs on simple, high-speed Ethernet under a single global namespace to simplify system management, reduce TCO and drive productivity.

Already implemented by post-production and animation facilities as well as major broadcasters, Panasas customers have deployed ActiveStor to re-render entire movies in record time, replace outdated scale-up archive infrastructure, and significantly accelerate production workflows.

How It Works — DirectFlow avoids traditional protocol I/O bottlenecks by allowing compute clients to access the entire Panasas ActiveStor directly and in parallel. This results in higher balanced performance than what can be achieved with industry standard protocols such as NFS and SMB, avoiding the load-balancing and congestion side-effects of these protocols.

How It's Implemented — DirectFlow is a file system driver that runs inside each compute client. DirectFlow establishes a parallel I/O relationship from the client to the ActiveStor PanFS® storage operating system for every file read/write. DirectFlow also performs client-side parity calculations for data written to Panasas storage, relieving this burden from storage and unleashing greater performance benefits.

Why It's Perfect for Content Creation — DirectFlow for Mac builds on the success of DirectFlow for Linux by extending the performance benefits of parallel I/O over Ethernet to the Apple Mac platform and macOS operating system. Apple users requiring performance have been traditionally limited to complex SAN topologies that deploy well but scale poorly and restrict open access to data. With the introduction of DirectFlow for Mac, the ecosystem of macOS applications can tap the parallel performance advantage of DirectFlow over Ethernet for the first time, leaving SAN behind and leveraging Ethernet's economic benefits

and infrastructure simplicity while also maintaining open access.

Why It's the Perfect Solution for the Storage User — When you double the performance of client applications accessing scale-out NAS you double the productivity of all users. This leads to higher quality outcomes because you have more time to perfect the product you are creating while also simplifying the cost of getting the job done. DirectFlow for Mac delivers breakthrough performance to all commercial markets serviced by the Apple Mac platform, including media and entertainment as well as life sciences and education markets.



Unlike competing post production storage solutions for large creative work teams that are fast but difficult to manage and scale, ActiveStor with DirectFlow for Mac is purpose-built to deliver a fast, high-performance experience handling modern-day media and entertainment workflows within an easily managed storage environment. A single administrator can easily manage dozens to hundreds of terabytes of ActiveStor storage to start, and it stays just as easy when scaling the ActiveStor solution to petabytes of storage capacity.

From visual effects rendering, to post editing, to active archiving, ActiveStor with DirectFlow for Mac delivers the performance advantage that allows editors to focus on their craft and not the storage.

www.panasas.com/DirectFlowforMac

PAYWIZARD AND GENIUS DIGITAL

Genius Digital Powers Paywizard Agile

Enables a 360° View of the Customer Journey With Predictive Churn Analytics

For TV operators — whether traditional linear TV, VoD, or hybrid service providers — there is an imperative to use viewing data to generate analysis that helps them remain competitive in an increasingly cut-throat pay TV market.

However, often when transactional, viewing and other subscriber data is held in silos, or if the data collected is substandard, operators struggle to integrate the various strands of information into existing processes and produce accurate insights that enable them to build stronger subscriber relationships.

Demonstrated for the first time at the 2017 NAB Show, Paywizard and Genius Digital offer a joint solution that provides operators with a true 360-degree, data-driven view of their subscribers that yields actionable insights.

The new partnership combines Genius Digital’s access to vast amounts of audience data to provide in-depth analytics around consumer viewing habits across millions of devices, with Paywizard’s technology and expertise in subscriber decision-making and transactional behavior.

Armed with this combined knowledge in a single-customer view, TV operators are better positioned to track and analyze subscriber behavior from all angles. The result is a powerful platform that pay-TV operators can use to build a picture of the full customer lifecycle — from acquisition to churn — to drive overall strategy and individual engagement.

What makes these subscriber insights actionable is the Decision Moments framework of Paywizard Agile, which now features predictive analytics and reveals propensity to churn.

Critically, using Genius Digital’s analytics to identify potential churners, supports a new advanced capability to provide data-led guidance on how to retain at-risk subscribers. Using data modeling and profiling, the platform then presents the best personalized package recommendations that are most likely to win over wavering customers.

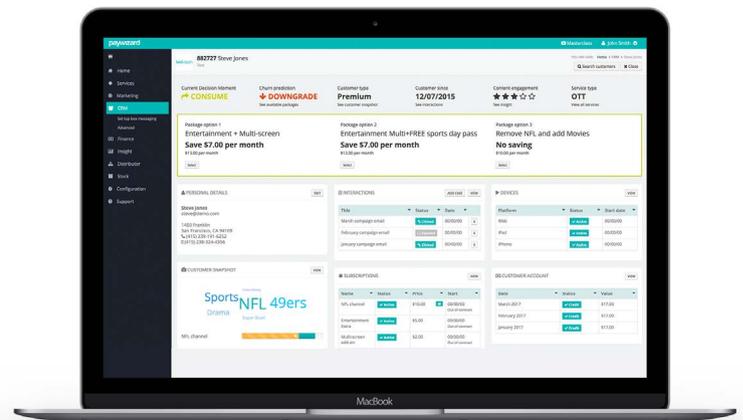
Additionally, this deep insight into each subscriber and their viewing habits means that upsell offers can be delivered in a highly targeted way. Operators can implement these capabilities immediately, without huge infrastructure additions or complex changes to business processes.

Addressing Decision Moments

Each time customers interact with an operator is part of a series of critical

‘Decision Moments’ that have massive impact on the subscriber relationship. Engaging effectively at each of these moments is vital to building subscriber loyalty and minimizing churn.

For instance, the Decision Moments framework might flag that, based on data, a customer taking a premium sports subscription used mainly to view football, along with a VOD movie channel that is hardly watched presents a high risk to churn. It will then set out a number of downgrade options — such as cutting the base package price by only including a



football channel and a pay-per-view movie service — at the next contact.

Understanding consumers’ circumstances and preferences at each stage of the subscriber journey and successfully addressing them to ensure positive customer experience is vital. Global research commissioned by Paywizard revealed that failure to understand a customer — and provide a consistently positive customer experience — can have a fatal impact on a subscriber relationship. A quarter of the 6,200 consumers surveyed had cancelled a pay-TV service as a result of poor customer experience.

The combined Genius Digital and Paywizard solution means operators are able to leverage a layer of richer, more comprehensive data on subscribers — whether it’s the type of content they watch, the devices watch it on, or even when they watch — to gain better insights. With predictive analytics and the Decision Moments framework, operators are then able to anticipate customer behavior and take precise, tailored actions to stem churn and grow revenues.



www.paywizard.com/meet-geniusdigital-and-paywizard-nab2017

PERSISTENT SYSTEMS LLC

MPU5 — Mobile Ad Hoc Networking

Broadcast the Action From the Most Challenging Locations

High profile events like the Super Bowl are often utilized by broadcasters to demonstrate the most advanced technologies commercially available. One technology, which was leveraged independently by FOX 26/KRIV-TV and Telemundo Houston/KTMD at Super Bowl LI was the MPU5 Video Transmission System from Persistent Systems LLC. Persistent Systems LLC provided its Wave Relay® technology during weeklong coverage from the NFL Live experience at Discovery Green Plaza in and around the George R. Brown convention center in downtown Houston. This provided an intensive “real world” use case against the backdrop of thousands of people, multiple stages, an intense RF environment with live shots throughout the week from many locations.

The MPU5 is a Mobile Ad hoc Networking (MANET) System, where the MPU5 radios automatically discover each other and instantly form and maintain an IP Mesh Data Network called Wave Relay. This robust network is then utilized to stream video directly from ENG cameras to the production studio. The MPU5 utilizes 3x3 MIMO-OFDM technology to achieve extremely high spectral efficiency enabling the networks to pack more simultaneous video streams into the limited spectrum allocated to them. “The MPU5 features very enthralling technology.

Unlike bonded cellular or Wi-Fi, this technology builds up its own securely encrypted and dedicated IT network that

allows IT and engineering staff to decide what to transmit across the bandwidth, only limited by their imagination,” said

Philip Muller, chief engineer, Telemundo Houston. The MPU5 radios mount directly to the ENG camera and provide both a 3G-SDI input with integrated H.264 video encoding and streaming, as well as a 100 Mbps Ethernet connection which can connect directly to the camera. Whether you are using the MPU5’s integrated streaming or leveraging the H.264 encoding integrated in the latest ENG camera offerings, the

MPU5 will deliver your video to the studio. When compared with bonded cellular, the MPU5 is smaller, lighter, cheaper, has no recurring costs, delivers significantly more capacity, and higher quality of service. Jerry Vazquez, vice president of News for Telemundo Houston added, “MPU5 helped our news crews connect directly to our newsroom, while out on the field and seamlessly, during one of the biggest events of the year: Super Bowl LI.” The MPU5 provides a modular radio architecture, where the frequency band can be changed by simply swapping the module. S-Band and C-Band modules are currently available with Broadcast Access Spectrum modules shipping in the fall. The MPU5 can transmit up to 6W of average power, enabling very high capacity over large geographic distances. Persistent Systems, LLC is now shipping the MPU5 radio system to customers.



persistentsystems.com

POINT SOURCE AUDIO

CM-i5 Patented In-Ear Broadcast Headset

New CM-i5 Features Same Patented Design, Now With Miniature Condenser Mic

The CM-i5 is the latest addition to the company's radically new and patented line of in-ear headsets; it includes a slimmer, lighter condenser microphone designed for clarity and all-day wearing comfort.

The new headset is among the world's only modular in-ear headsets offering a revolutionary combination of in-ear performance, lightweight comfort and earphone modularity. The robust feature set makes the headset ideal for broadcast teams from directors to camera operators who rely vitally on the ability to quickly in order to capture live action shots.

The one-of-a-kind design brilliantly captures what traditional headsets have been lacking. For anyone who must work in loud environments, or have health concerns about sharing headsets or bulky headsets that weigh too much, this solution will give them relief from all these problems. The headset's low profile binaural earphone feature is a simple yet inventive method to block out noise and boost audio clarity — solving many age-old dilemmas experienced by headset wearers. Handheld camera operators in particular love the earphones as it is impossible for them to wear large dual ear muffs with the camera mounted over one shoulder. A single earmuff is inadequate both in protecting from loud background noise or providing the necessary volume for audible cues. As a result, users turn up the volume in the one earmuff to dangerous levels that can cause hearing damage over time, as well as other concerns such as ear ringing.

While dual ear muffs can help block out noise, uncomfortable weight is another health concern often expressed by dual ear muff users. Wearing bulky headsets, especially after several hours, can cause head and neck strain well beyond the wearing period. At just 1.8 ounces, Point Source Audio's patented headsets are the first to solve this challenge by reducing the weight by as much as 90 percent compared to traditional headsets. As a practical matter, headset users that need to wear head gear such as helmets or caps can now do so without sacrificing performance or safety.

The popularity of the in-ear headsets is surging among production teams working in all types of industries from sports to space — with the Carolina Panthers' Panther Vi-

sion, SpaceX and NASA being added to the company's growing list of customers. At just under 2 ounces, the weight of the CM-i5 is barely detectable even after wearing for a full day. The earphones include an upgraded design; they provide up to -24 dB of noise reduction and are interchangeable depending on the user's personal preference. The CM-i5 headset features the company's flagship "unbreakable boom" flexible to



360 degrees thus allowing for optimal microphone to mouth placement.

The dual in-earphones offer a great balance of noise isolation when needed, as well as the ability to hear ambient sounds with incredible ease simply by switching from left, right, or left and right listening modes with one finger — and without having to remove the entire headset.

The CM-i5 has a miniature condenser element and will be available with a variety of XLR connectors compatible with popular intercom systems that provide phantom power, such as Clear-Com, Telex, Riedel and Radio-Active.

For comm apps on iPhones and smartphones, a 3.5mm phono plug is offered.



POINT SOURCE AUDIO

Revolutionary Mic Offers Built-In Backup

CO2-8WL Is Two Mics in One, Supporting Two Separate Wireless Transmitters

The CO2-8WL is a fully redundant dual element microphone—adding to the company’s award-winning collection of miniature microphones. The all-in-one solution offers built-in backup with precisely matched microphone elements in a single self-contained housing and is ideal for talent requiring microphone backup in live broadcasting and production environments.

The redundant microphone will offer broadcast and production techs peace of mind with a fast and simple method of providing backup for critical on-air broadcasts of live talent. The mic’s one-of-a-kind design pairs two microphone elements into a single housing to create a form factor that is more streamlined and lower profile. Used with the company’s proprietary razor thin Slider mic clips or EMBRACE™ Earmounts, redundancy is accomplished with style — not cable clutter.

Whereas a usual method of redundant mic’ing can be achieved with two separate microphones, audio between them may vary due to differences between the microphone brand, the microphones’ age, as well as variances in the specifications. Point Source’s new redundant mic solves this challenge with elements that are factory matched in frequency and sensitivity so when vital



backup is initiated, any difference in audio performance is nearly undetectable.

The built-in backup design mates the dual mics as well as their independent and continuous wire paths into a singular housing and wire jacket giving technicians a clean alternative to cumbersome cable dressing. The mic cable splits approximately nine inches above connection to the body-pack transmitters to allow ample room for separation of the transmitters.

The all-in-one redundant microphone will be available as a standalone lavalier (CO2-8WL) that is part of the company’s SERIES8 category of performance microphones. Additionally, it will be offered within the EMBRACE category of earmountable lavaliers when absolute mic concealment is needed. EMBRACE microphones are patent pending with an inventive design that cuts down the time to conceal microphones to mere seconds. The two models both have an omnidirectional pick up pattern, 136dB SPL, and are highly adaptable to all types of applications and audio environments—both indoors and outdoors as the microphones are also water and sweat-proof rated to IP57.

www.point-sourceaudio.com/lavalier_mic_redundant_pr.html

PRIME FOCUS TECHNOLOGIES

DAX® Production Cloud

ONE Software for Dailies and Post Workflows

Part of Prime Focus Technologies' flagship product CLEAR™ Media ERP, the new DAX® Production Cloud vastly improves workflow efficiency by centralizing assets into a single repository which can be securely accessed by authorized stakeholders throughout the content lifecycle. DAX® Production Cloud allows the use of same system for both Dailies and Post Production workflows. It enables editorial, creative agencies, VFX and localization vendors — all stakeholders within the production supply chain — to collaborate, service and distribute media, all on the same software. DAX® Production Cloud builds on the success of earlier generations of software, including the award winning DAX® Digital Dailies®.

The solution effectively bridges the gap between production, broadcast and studio operations, enabling instant access to high-res content, in DNX or Pro Res, directly from the set with the capability to create a multitude of formats for downstream promotional, marketing and publicity use cases from one system.

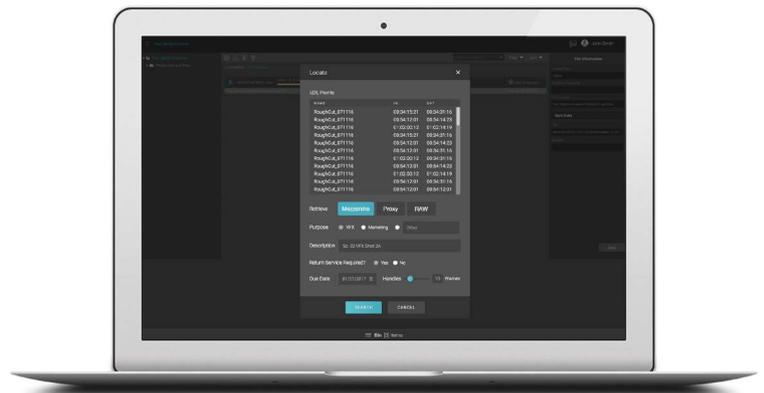
With high-res content on the system, users can also have seamless access to other CLEAR modules like Promo Operations that allows end-to-end business process orchestration for promo creation including automation of promo versioning using Adobe® Premiere® Pro CC.

Key Features:

- Production Servicing Module — single file ingest, transcode, watermark, distribute multiple formats to production stakeholders and partners
- Instant access to high-res content, in DNX or Pro Res, directly from the set
- “My Projects” — inbox of high priority files for review
- Clip-based workflows
- No limit on file size for uploads / downloads
- Adaptive, multi-bitrate streaming
- Business Process Engine to tailor workflows
 - Support for Mezzanine files and essences
 - Mobility-Support for iOS (iPad and iPhone), Android
 - Powerful Screening Room Experience using DAX® Set-Top-Box (STB)
 - Self-Administration to organize content, configure rules and manage user access



- Secure “Offline Mode” to view content without internet connectivity
- Ability to send review/approval tasks to existing teams/users
- Ability to share assets with advanced security precautions
- Strongest security in the business: 2 factor authentication, customizable watermarking etc.; MPAA® audited, SOC2, ISO 27001 (2013) certified
- Seamless access to cloud storage and dynamic transcoding via CLEAR Operations Cloud, as well as other CLEAR modules
- Patented technology — covered by several US Patents including: 7,660,416, 8,218,764, 12,976,929 and 13,903,908



Key Benefits:

- Lower total cost of ownership and total cost of operations: Enterprise-grade video management and collaboration
- Enhanced efficiencies: By enabling instant access to high-res content in DNX or Pro Res, with the capability to create a multitude of formats for downstream promotional, marketing and publicity use cases from one system enhances production efficiencies like never before
- Streamlined operational logistics: Automated workflows, custom sharing and distribution features, content lifecycle metadata and self-administration
- Drives creative enablement: Strengthened feedback loop
- Faster time-to-market
- SaaS Model: No upfront Capex, conserving capital that can be invested on creating content

www.primefocustechnologies.com/dax-production-cloud

PRONOLOGY

StreamFile Core

Cross-Platform App That Encodes NLE File Formats From IP Video Standards

Pronology's StreamFile Core is a cross-platform standalone application that allows for encoding of the evolving IP standards such as Aspen, NDI, NMI, SMPTE 2022 and SMPTE 2110.

It facilitates their distribution as popular file-based codecs such as ProRes, DNX, XDCam and others.

StreamFile Core bridges the gap between new IP based video technology and legacy file-based workflows. This application will enable facilities and studios moving to an IP-based platform to utilize their existing NLE, graphics, and digital system infrastructures.

The application is agnostic to frame rate and resolution.

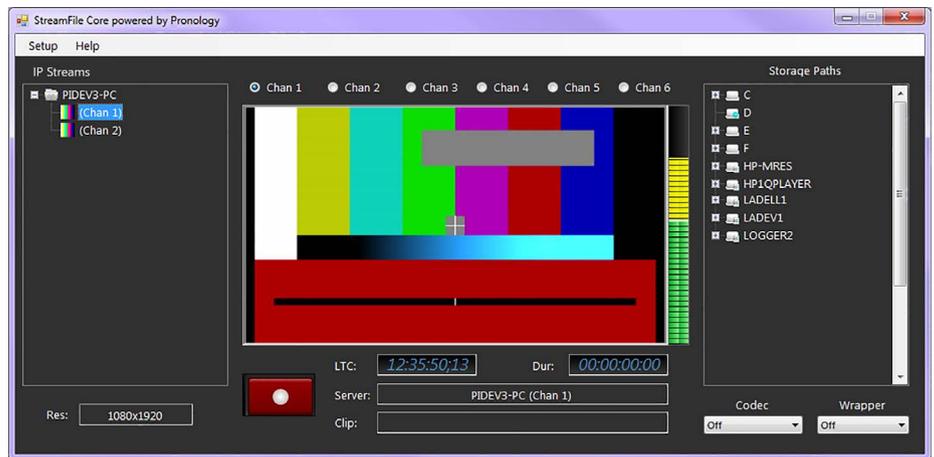
This architecture allows for a future-proof way to utilize evolving IP video standards without any hardware upgrades to existing systems.

StreamFile Core is an easy-to-use tool that builds upon Pronology's reputation of creating simple and understandable user interfaces.

This low-cost tool is designed to be run on any system

with minimal setup allowing companies of any size to enter the IP technology landscape, without a large investment.

Compatibility, low cost and ease of use make Pronology's StreamFile Core a must have for any company interested in integrating with emerging IP technologies.



QUANTUM

StorNext 6 Workflow Storage Platform

Unparalleled Combination of High Performance and Advanced Data Management

StorNext 6, a major new release of Quantum's acclaimed workflow storage platform, features substantive updates that empower users to handle higher-resolution formats with ease, collaborate seamlessly across geographically distributed sites, track and manage content more closely, and optimize archive policies and storage to maximize both the value and utility of their storage infrastructure.

Leveraging its extensive real-world 4K testing and a series of 4K reference architectures developed from test data, Quantum provides scalable storage capable of delivering high performance using less hardware than competing systems. With StorNext 6, Quantum delivers a new quality of service (QoS) feature that empowers facilities to further tune and optimize performance across all client workstations, and on a machine-by-machine basis, in a shared storage environment.

Using QoS to specify minimum bandwidth allocation to specific workstations, a facility can guarantee that more demanding tasks, such as 4K playback or color correction, get the bandwidth they need to maintain uncompromising video quality — and also ensure that less timely or demanding tasks don't consume unnecessary bandwidth. As a result, StorNext 6 users can take on work with higher-resolution content and easily optimize their storage resources to accommodate the high performance demands of such projects.

To address the challenges of global "always on" production workflows, StorNext 6 allows multiple instances of StorNext, located anywhere, to share a single archive target. Because the movement of content can be fully automated according to policies, all users have access to the content they need without having it expressly shipped to them.

The new FlexSync feature of StorNext 6 leverages database system enhancements to facilitate continual synchronization of both metadata and content across two StorNext installations. Tracking incremental differences between files over time, FlexSync can trigger near-instant copies of data or updates to metadata so that current files are available almost continually at both sites. FlexSync also can

serve as a solution for ensuring business continuity: If the primary location were to go down, editors at other locations could pick up and continue work within minutes.

With added data management capabilities, StorNext 6 gives users greater control and selectivity in maximizing their use of storage on

an ROI basis. When archive policies call for storage across disk, tape and the cloud, StorNext makes a copy for each. A new copy age-off feature allows users to set additional rules determining when individual copies are removed from a particular storage tier. This approach makes it simpler to maintain data on the storage medium most appropriate and economical, and in turn to free up space on more expensive storage. When one of several copies of a file is removed from storage, a complementary selectable retrieve function in StorNext 6 enables



users to dictate which of the remaining copies is the first priority for retrieval. As a result, users can ensure that the file is retrieved from the most available storage tier.

StorNext 6 offers valuable new capabilities for those facilities that subscribe to MPAA rules for content auditing and tracking. The platform now can track changes in files and provide reports on who changed a file, when and how, and also on if, how and when content was moved.

The industry's ongoing shift to higher-resolution formats, its use of more cameras to capture footage and its embrace of additional distribution formats and platforms puts unprecedented pressure on storage infrastructure. StorNext 6 addresses these challenges, enabling exceptional efficiency and providing a foundation for flexible growth in a dynamic and demanding marketplace.



www.quantum.com

QUMULO

Qumulo Core — Modern Scale-Out Storage

For the New Era of Multi-Petabyte Data Scale on Premises & in the Cloud

Qumulo Core is a new generation of modern scale-out storage software engineered to store and manage unstructured and file-based data at web-scale. It enables M&E companies to easily and efficiently store, manage and curate billions of digital assets. Qumulo Core is a software-only, flash-first hybrid design that is optimized for the widest range of workloads and file sizes and is 100-percent programmable through an interactive REST API. It is powered by the Qumulo Scalable File System (QSFS), which provides real-time visibility into data and storage.

Qumulo’s modern scale-out storage for today’s M&E digital factory empowers content creators to accelerate the delivery of digital assets. Customers gain the speed and scale needed for data-intensive workloads such as VR, VFX, 4K, animation rendering and broadcast at a fraction of the cost of legacy scale-out architectures. The benefits of Qumulo Core include:

- Built for web-scale IT with a software-defined scale-out storage architecture that runs on premises and in the cloud. Qumulo Core is ideal for mixed workloads and scales to billions of large or small files and multi-petabytes of data. With a flash-first hybrid design M&E customers gain the highest performance and lowest cost.
- Real-time visibility and control with instant actionable insight into data and storage. The solution provides real-time troubleshooting and delivers up to 200 percent more usable capacity compared to legacy scale-out NAS systems.
- Industry-proven to fit into existing M&E workflows and offers the highest throughput for the most data-intensive workflows.

Qumulo Core is already in use in the world’s top three largest film animation studios and has supported the creation

of award-winning films such as Golden Globe and Academy Award winning “La La Land,” as well as “Pirates of the Caribbean,” “The Walk,” “Hidden Figures,” “Star Trek Beyond,” and many others. It is the storage solution of choice for M&E workflows, with a modern architecture, intelligence built into the file system and proven success with the industry’s most demanding workloads. Qumulo’s M&E customers include: Alter Ego, Ant Farm, Atomic Fiction, Awesometown, Blind Studios, Crafty Apes, The DAVE School, Deluxe VR, Dreamworks, Eight Solutions, FotoKem, Intelligent Creatures, Mr. X, MSG Networks, Pipeline Studios, RodeoFX, Sportvision, ZOIC Studios and many more.

In February 2017, Qumulo announced a new release of Qumulo Core, delivering the industry’s first machine intelligent storage quotas, and the Qumulo QC360, a new high-density storage platform.



qumulo.com/products/qumulo-core

ROHDE & SCHWARZ GMBH & CO. KG

R&S PRISMON Monitoring and Multiviewing

Cost-Efficient Monitoring/Multiviewing for Broadcast and Streaming

The monitoring and multiviewing solution R&S PRISMON is fully software-based and takes an innovative multistandard, multi-protocol approach. It supports traditional SDI signals and all relevant IP-based protocols, including MPEG-DASH, AIMS and ASPEN. Future protocols and media formats can be added via software upgrades, making R&S PRISMON a cost-efficient solution for all broadcast and streaming media service providers. For the first time, a single instrument platform can now be used to monitor both contribution and distribution — including the dynamic field of streaming media services. This solution has a major potential for cost savings and productivity improvements. R&S PRISMON is available as a standard IT platform and for the first time also as a cloud-based solution.

Broadcast and streaming media providers are faced with an increasing number of fast-evolving transport standards and media formats. A rapid response to changing requirements is needed in order to ensure optimal encoding and transport of media content, both of which are key to providing an exceptional, high-quality media experience for premium pay-TV customers, for example. The new R&S PRISMON offers a flexible solution for automatic monitoring of transported broadcast and streaming media content.

R&S PRISMON allows service providers to meet their contractual requirements with regard to service quality and availability in order to ensure customer satisfaction. R&S PRISMON already



supplies the market with a unique protocol suite, including HLS, MSS/HSS, DASH, HDS, RTMP, HBBTV and IceCast, for OTT/streaming services.

R&S PRISMON is fully software-based, making it a flexible and adaptable solution. It supports, among other features, the SDI, SMPTE 2022-1/2, SMPTE 2022-6, AIMS, ASPEN, HLS, DASH transport standards as well as media formats such as MPEG-2/4, HEVC and TICO. Future new standards and media formats can be added via software upgrades efficiently and flexibly. R&S PRISMON automatically detects dropouts and content errors in real time, using sophisticated monitoring functions such as “Video freeze with whitelisting” and “Video content compare.”

A large number of channels — including those in UHD quality — can be monitored in parallel with R&S PRISMON and visualized in a straightforward manner on a multiviewer video wall. Using a mobile app,

a cloud-based service from Rohde & Schwarz transmits the collected monitoring data via a secure connection and displays it on mobile user equipment, allowing technicians for the first time to quickly identify and assess the sources and effects of errors without requiring an on-site visit.

R&S PRISMON is easy to set up and operate via its intuitive, web-based user interface. It is up and running within a very short time and can be administered via SNMP or remote API. Users can conveniently adjust the layout of the multiviewer video wall to their specific needs using graphical editors. R&S PRISMON allows fast and easy operation and administration under widely varied operating conditions.



www.rohde-schwarz.com/prismon

ROSS VIDEO

Graphite Live-Event Production System

The Combined Production Power of Carbonite, XPression and Rave

Graphite is an all-in-one live-event production system designed and built with the quality and reliability users have come to expect from Ross. Graphite combines capabilities of the industry-leading Carbonite production switcher, powerful XPression Graphics and the Rave Audio Engine – all within a compact 4RU chassis.

Graphite introduces a new hardware-based element for complete reliability — a Carbonite engine built onto a PCIe card that features an independent real-time operating system. This is a vital feature for live production, as it protects against virtually every failure that traditional



all-in-ones are vulnerable to. As long as Graphite is plugged in and the power is on, the core production will run smoothly and without interruption.

The integrated Carbonite switcher contains two powerful MEs with four full featured keys, a transition keyer for DVE and Media Wipes, and two Ultra-chrome chroma keys. In addition, there are four MiniMEs that provide fantastic flexibility during production. Each MiniME features two keys, can be assigned to multiple locations, and utilized simultaneously

— making them a great choice for simplified live-event production or for use as secondary system in large-scale productions through the AUX outputs of the main switcher.

Further augmenting Graphite's production capability is XPression Graphite. This is a single-channel version of XPression graphics that can do more in one channel than many systems can do with multiple ones. On this single channel, users can tap into XPression's unlimited layering power to make complex or separately layered graphics. Users can also create templates with true 3D objects, utilize virtual camera movements to create dynamic animation sequences, and benefit from XPression's simplified user interface with such features as the Playout Sequencer for precise playout operations.

Without any additional hardware or software, two channels of XPression Clips is also included — to add yet another layer of production sophistication. Clips includes a full database to browse, catalog and output clips directly to air on any channel or layer.

Last but definitely not least, Graphite introduces the amazing Rave Audio Engine. Rave breaks the mold of uninspired audio capabilities in all-in-one systems - offering crisp 24 bit audio from external embedded SDI inputs, as well as from internal XPression and Carbonite MediaStore sources. Graphite can also send and receive audio from within the system-host PC and utilize the PC speaker outputs for monitoring.

All of these sources can be fully controlled through Graphite's dedicated DashBoard-based 24 input audio mixer. This a fully-featured audio system that can be accessed through the DashBoard browser, and features tight integration with the Carbonite switcher for seamless operations.

For productions that require greater audio capability, there is the Optional Audio Breakout Panel. This panel adds eight analog inputs and five analog outputs, as well as AES IN and OUT. This is an excellent option for live-event productions or any production involving mic'd up hosts. All analog inputs can be controlled through the Rave Audio Mixer and outputs can be used for customized AUX channels — ideal for individual Mix/Minus feeds to your hosts. Microphone Pre-amps, as well as toggle-able phantom power on these inputs ensures quality sound across the board.

For a complete live production solution, Graphite is the answer. Experience the combined production power of Carbonite, XPression and Rave — all within a compact and incredibly reliable system.



www.rossvideo.com

RTS INTERCOM SYSTEMS

ROAMEO Wireless Intercom System

Full-Function Professional Intercom Keypanel in a Wireless Beltpack Format

ROAMEO wireless intercom system combines user-friendly operation and seamless communication across large areas.

- Fully integrated into all digital RTS matrices, the wireless solution allows users to address either individuals or specified groups
- Uninterrupted, high-quality and license-free audio based on DECT standard allows integration of a large number of simultaneous users across wide areas
- ROAMEO brings most advanced professional-grade long-distance wireless communications to RTS intercom systems
- User-friendly, intuitive operation ensured by icon-based setup and buttons with tactile feedback

ROAMEO from RTS is a professional, easy-to-use and future-proof wireless intercom solution based on the license-free DECT (Digital Enhanced Cordless Telecommunications) standard with a protected frequency band. It provides high-quality audio over a seamlessly integrated digital wireless beltpack and associated access points. Featuring a modern, rugged design, ROAMEO is suitable for a wide range of professional intercom applications where wireless communication is critical, including broadcast production studios, theater and sport event productions, houses of worship, commercial buildings and outside broadcast (OB) trucks.

Fully integrated solution using state-of-the-art technology:

Operating like a wireless keypanel, ROAMEO can be fully integrated into all existing wired digital RTS matrices. The system allows users to address either individuals or specified groups. The system consists of the TR-1800 beltpack, the AP-1800 access point and accessories including charger, holster and pole-mount kit. Connection to a digital matrix is easily established via a single Ethernet cable. In addition, the system can use standard IT infrastructure, which ensures easy installation and low maintenance costs; the access points can be daisy-chained.

Seamless roaming across wide areas:

ROAMEO's cellular structure can cover a wide area with superior audio and seamless roaming between the individual cells. Users can easily expand the coverage area by adding further access points, while additional wireless beltpacks can be directly addressed as part of a wired RTS matrix intercom system. Depending on the audio codec used, users can select between a higher emphasis on voice quality (G.722 full bandwidth) or a more efficient use of the radio spectrum with a higher number of beltpacks (G.726 narrow-band).



User-friendly operation:

ROAMEO provides a superior user experience — the system can be easily configured in a multi-language setup via scroll lists on the beltpacks or using the control software, which allows users to configure the complete intercom system on one screen. Thanks to its large color LED display and intuitive icon-based menu structure, the beltpack is very easy to set up and operate. The four talk/listen buttons are shaped differently and provide users with a tactile feedback; the operation of the device is thus possible also in low light conditions and without the need to look at it. With its lightweight, durable housing, the beltpack features the smallest enclosure in its class and is protected against dust and light rain. The ROAMEO system is an environmentally friendly system without any dangerous emissions at low radiation. It is compliant with the US environmental regulation N33.6.

ROAMEO will be available worldwide in spring 2017.

www.rtsintercoms.com



SCREEN FUTURE

SFT XE Series — Digital TV Transmitters

Extreme Efficiency

The combination of: ARK-X New Exciter, Universal Driver with Multiple Front-End Boards, and the SFK/XE Amplifier Series (eXtreme Efficiency)

The New Revolutionary FUTURE SFT/XE eXtreme Efficiency DTV Transmitter Series is reaching the highest technology level in both TV digital signal processing and RF domain. The top performances of this transmitters series are possible thanks to:

- 1) *ARK-X*: the new evolution of the ARK Series multistandard DTV Drivers, the ARK-X Series, able to meet or exceed all the DTV international broadcasters requirements. The improvement of digital adaptive precorrection and configuration flexibility was the key points for this advanced product, developed by the excellent Screen R&D Digital Signaling dept.
- 2) *XET™ eXtreme Efficiency Technology*: the new Screen XET™ is the result of using latest generation LDMOS devices (more rugged and efficient compared to the past), with a special low-loss design of matching and combining system, together with extremely high-efficiency power supplies (over 96 percent efficiency). This XET™ Technology, applied to the amplifier section of the FUTURE SFT/XE Transmitters, grants up to 42 percent overall efficiency in this new Series.
- 3) *Compactness*: the highest efficiency reached thanks to the above-mentioned technology,

combined with a new concept of heatsync and ultracompact power supplies, grants the minimum sizes of amplifier modules with air- or liquid-cooling systems, and a greatly reduced dimensioning of the cooling system itself. A 10 kW rms DTV Transmitter in a single rack is just an example of this extreme compactness.

- 4) *Easy and Fast Maintenance*: Screen Group's 25 years' experience allowed for designing this new FUTURE SFT/XE SERIES with a significantly improved easy-maintenance concept. All RF power modules are hot-pluggable (both liquid- and air-cooled versions) for an easy bench testing and/or instant replacement on site. All RF power modules are equipped with three independent power supplies for maximum redundancy and easy single phase or balanced three phases operation selection. These three power supplies are also hot pluggable themselves, for a unique way of smart maintenance. The latest generation of industry higher class power supplies grants over 96 percent efficiency with wider input AC range capability and greater ruggedness.
- 5) *Smart System Design*: Latest generation progressive RF combiner with ultra-compact unbalancing dummy loads and a smart intercommunication interface between RF modules, drivers, and Logical Control System allow for a very clean and easy-to-maintain system configuration both for liquid- and air-cooling equipment.



www.screen.it/products/tv-transmitters/sft-xe-series

SHURE INC.

Axient Digital Wireless System

Shure's Most Advanced Wireless Platform

Shure debuted the Axient® Digital Wireless System at the 2017 NAB Show. As the new premier wireless system in Shure's successful portfolio, Axient Digital builds on the superior benefits of the company's UHF-R®, ULX-D® and Axient wireless systems to create the most advanced wireless platform to date, suited for all professional productions and situations. Catering to evolving customer needs — especially in an environment of continued RF spectrum pressure — Axient Digital provides high-performance RF, exceptional audio quality, command and control, and hardware scalability.

Axient Digital features a receiver that is compatible with its two transmitter offerings, the AD Series and ADX Series.

AD Series transmitters deliver a tremendous level of core product benefits including exceptional RF performance, digital audio and networking. Axient Digital ADX Series transmitters additionally incorporate ShowLink, which provides real-time control of all transmitter parameters along with interference detection and avoidance. The ADX Series also includes the first micro bodypack with an integrated self-tuning antenna, enabling greater concealment and comfort.

Ideal for a variety of users and applications, Axient Digital features numerous user-friendly features and benefits:

- **High-Performance RF** — Incorporating all of the capabilities that professional productions demand, Axient Digital is designed for maximum signal stability. It features true digital diversity with Quadversity™ and a robust high density mode that delivers superior spectral efficiency, significantly mitigating the potential for signal fades or interference that can cause drop outs. Quadversity antenna mode enables users to place sets of diversity antennas in different zones, or double the number of antennas in a single zone, to improve RF signal-to-noise in challenging environments.
- **Audio Quality** — Featuring transparent digital audio via Dante, AES67 and AES3, Axient Digital has a 20 Hz to 20 kHz range with a flat frequency response and accurate transient response. Axient Digital also boasts wide dynamic range and an industry leading 2ms latency from the mic transducer to the analog output.
- **Command and Control** — Axient Digital is compatible with Shure's Wireless Workbench® for efficient control and configuration, as well as the ShurePlus™ Channels App for optimal spectrum management and frequency monitoring. The system's



Dante Cue and Dante Browse features enable headphone monitoring of high-fidelity, true audio output from any Dante-enabled connected device. Additionally, Axient Digital's networked charging capabilities provide a suite of smart, high-performance batteries and chargers.

- **Hardware and Scalability** — Axient Digital's wide tuning range of 184 MHz for all transmitters and receivers covers an extended range of spectrum and simplifies inventory. Dual and quad receiver options combined with a common receiver platform supporting both AD and ADX transmitters, maximizes user flexibility and scalability.

Axient Digital is compatible with the Shure Battery Rack Charger (SBRC), which supports up to eight rechargeable batteries in a single, compact rack space. Providing a seamless, tour-ready battery charging and storage solution, the SBRC features an easy-to-read front panel that displays critical battery parameters, including charge status, time-to-full and battery health indicators. When connected to a network, Shure Wireless Workbench and ShurePlus Channels software provide remote monitoring of the SBRC to track battery status.

Given the increasing challenges of RF spectrum, it's essential that users have access to a system that can deliver the critical audio inputs of a production reliably over the air.

With unparalleled RF stability and spectral efficiency, Axient Digital offers a variety of users the flexibility to work in the available spectrum, whether the number of channels required is great or small, and provides the pristine sound quality that today's productions demand.



www.shure.com/axient-digital

SILVUS TECHNOLOGIES

StreamCaster 4400 Wireless Connectivity

Wireless, IP-Based Innovation Offers Enriched Bidirectional Performance

Reliable, bidirectional connectivity between field and studio is key to seamless newsgathering and sports and event coverage. Broadcasters can now reap the benefits of Silvus Technologies’ wireless, ad hoc mesh network to achieve a level of performance that outshines COFDM, bonded cellular and Wi-Fi-based approaches. Their newest MN-MIMO radio launched at the NAB Show, the StreamCaster 4400, is engineered with unique beam-forming capability that has been proven to greatly expand signal range and coverage area while delivering bullet-proof reliability.

This 8 watt radio comes with advanced 4x4 MIMO antenna configuration and transmit beamforming. Beamforming automatically focuses signal energy in the desired direction to provide up to 2x increase in range, allowing operators to reduce hardware and eliminate lengthy cable runs while achieving greater throughput and minimal transmission latency. With an integrated bidirectional voice comms channel, 64 GB of on-board storage and a highly intuitive, user-friendly interface, the StreamCaster 4400 is designed to become a broadcaster’s best friend.

Surpassing similar offerings in the market, the StreamCaster 4400 supports both the BAS and ISM/unlicensed bands (among other frequency options) in a single radio to capture high-quality content for incredibly compelling live action broadcasting. Bidirectional video, audio, data and comms are streamed via IP using an always-on, infrastructure-less, self-forming/self-healing RF mesh network.

With the StreamCaster 4400, multiple wireless cameras can operate in the same frequency. Massive signal range is established without any cabling, reducing set-up and strike times. Much higher data rates enable 4K and 360 degree/virtual reality wireless camera systems. Each dedicated network of-

fers protected frequency band options that guarantee transmission even during times of cellular network congestion.

This 4x4 MIMO radio transmits high-definition video, data and comms at near zero latency over incredible distances. As a point-to-point data link or as part of a comprehensive, self-forming/self-healing mesh network, the SC4400 intelligently optimizes signal transmission in both line-of-sight and non-line-of-sight operations.

Broadcasters wanted solid dependability with flexible mobility in the field. Silvus created the StreamCaster 4400 to meet those needs with a range that is two times greater than before and that operates when other links can break. Plus you can eliminate the costs associated with recurring network charges, so you’re getting a vastly improved performance with a smaller footprint at a very compelling price-point.

The SC4400 radio utilizes four antennas for true 4x4 MIMO, and is equipped with standard connections including Ethernet, USB, Push-To-Talk voice, RS-232 and a Wi-Fi port for connecting a phone, tablet or laptop to access the StreamScape user interface. This comprehensive network manager allows users to monitor signal strength, data rates and radio stats, and to test links and make adjustments. The spectrum scan diagnostic tool enables the user to analyze the available range of frequencies and select a channel that is

free of interference. An embedded mapping display also enables nodes to be tracked in real time, providing a bird’s eye view of entire system.

In 2004, Silvus Technologies developed the state-of-the-art waveform that would come to be known as Mobile Networked MIMO (MN-MIMO). Since then, proprietary computer software development, simulation capabilities, hardware prototyping and field testing coalesced to create a revolutionary new method of wireless communications we know as mobile ad hoc networking (MANET). Silvus was the first to apply MANET to TV broadcast applications.



SIMPLYLIVE

ViBox All-in-One Production System

Innovative Touchscreen Interface to Drive the Next Generation of Users

The ViBox is a powerful integrated system packing the traditional production equipment into a small footprint delivering a cost-effective solution. As the consumer continues to watch content on a growing number of platforms, the demand for creating more media multiplies. Yet, the expectations for a high-quality production hasn't changed. The ViBox integrates the production switcher, audio mixer, graphics, replays, highlights and more into a 4RU server and add-on audio mixer. It has been designed to address the cost pressures of production with a lower investment cost on hardware but more importantly, there is a significant reduction in operating costs through its efficient, touchscreen driven user interface. This UI breaks with the traditional button panel approach to switching and the concept of "one task equals one machine equals one person."

The ViBox innovation starts with the core server, which is manufactured for reliability and performance. The ViBox chassis is designed with eight 3G SDI channels, combining CPU and GPU processing with 1 Gb/10Gb connectivity and full IP architecture. This commodity hardware is optimized to achieve the following:

- Record up to six or seven HD SDI cameras/feeds with 16 embedded audio channels
- Playout clean and dirty HD SDI program feeds while simultaneously recording them on RAID storage
- Digital audio mixer with 18 Analog audio inputs and eight Analog audio outputs
- Import graphics or use external live graphics integrated via NDI
- UI on 27-inch Touchscreen for one user with option to add a second touchscreen in a collaborative environment

The ViBox architecture has also been designed to tackle the transition to "at-home" productions. As the operational costs to send staff on-site continues to be a significant part of the budget, producing content back at the facility allows for less staff at the venue. It allows for additional budget savings with the ability to scaled-down the cost of the control room with less monitoring and hardware while also decreasing the staff needed to operate the system.

This powerful ViBox server is driven by a pioneering, intuitive user

interface that breaks with the norm, to embrace and drive the next generation of users. The user interface is designed to be fully controlled with an optimized 27-inch touchscreen. The visual nature of the interface makes the actions instinctive as you are selecting and manipulating that which you see on the screen.

The key attribute of the interface is the intuitive automation that al-



lows users the ability to create such high-level productions. User defined automation rules allow for context-based transitions (cut live cameras, trigger graphic replay wipes, use mix effects between replays, trigger graphic wipe back to live, etc.). This integrated level of design allows the user to concentrate on telling the story of the action while the built-in automation eases the burden of operation.

The capability of the ViBox was summarized in a recent case study by a high-profile broadcaster. The requirement to feed a substantial number of media channels with complementary events forced a new plan with a fixed budget constraint. The key was the broadcaster still expected their high standard of deliverables for the live coverage of these events. The previous staff for covering similar traditional six camera events was 29 people. Adopting the new workflow around the ViBox cut the staff down to 12. These types of numbers show the impact and value the ViBox solution can bring while delivering on the high-quality production expectations.

www.simplylive.tv

SNELL ADVANCED MEDIA

SAM VIBE – News Production

Content Everywhere for Everyone

SAM VIBE allows a single production team to create and deliver quality news content and publish it to any platform in any format. SAM VIBE can capture any feed, in any format or aspect ratio, which can then be incorporated into the latest TV news production or retransmitted to other mobile devices, but this time with customer's branding and production values — instantly.

SAM VIBE's flexibility allows customers to produce not only multi-format content for multiple different platforms; it allows that content to be differentiated by quality as well. Content destined for immediate release to mobile/internet channels can be turned around with the bare minimum of editing/creative input to ensure being first with the story. Conversely, the same content can then have a high degree of creative input in preparation to being shown on the TV flagship program — all from the same content and the same production team at the same time.

Key Features

- The power of Rio — delivering your story with simple, easy-to-use tools for editing all shapes and types of content. Plus all of the Rio features including color, effects and text
- SAM's proven sQ server technology and standard IT storage provides true collaborative workflow, sharing projects with ease



- Fantastic automated editing capabilities. Exporting sequences with effects and graphics straight to your website or to social media couldn't be easier
- Automated render engines for speed and productivity
- TV playout under MOS control from your newsroom computer
- Browser-based remote editing and shot selection with Go!



SNELL ADVANCED MEDIA

MV-8 Series of Multiviewers

Integrated Monitoring Solutions for High Signal Density Systems

The MV-8 series consists of modular, standalone, router integrated and IP multiviewers to give users the opportunity to maximize monitoring broadcast workflows whatever platform they choose. All models within the MV-8 series include features that give users the ability to fully enhance monitoring systems such as SD/HD/3G/4K and IP I/O, expandable I/O, support of SDI, analog, HDMI and fiber as well as AES, analog, balanced and unbalanced audio, alarm systems,



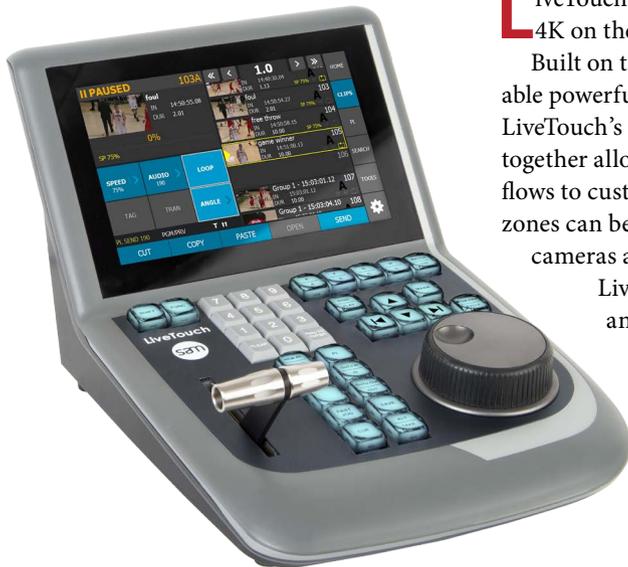
dedicated router connectivity and a full biometric signature generation for cutting-edge sophisticated monitoring.

The MV-8 series of multiviewers have been designed to simplify user's workflows and give the best quality image display with a feature set that surpasses any other multiviewer in the market. They ensure users no longer suffer from frustrating setup issues and de-risks installations, getting systems up and running quickly and easily.

SNELL ADVANCED MEDIA

LiveTouch 4K Highlights and Replay System

The World's Most Agile Highlights and Replay Workflow



LiveTouch 4K offers the fastest, most efficient sports highlights and replay workflows in SD/HD or 4K on the market today.

Built on the latest SAM server technology, LiveTouch 4K uses SAM's unique technology to enable powerful workflows in standalone systems or integrated into a wider production environment. LiveTouch's inter-server workflows allow the system to thrive in 4K. Multiple servers can be pooled together allowing LiveTouch to seamlessly scale to larger 4K productions, providing flexible workflows to customers while also preserving rack space in trucks and studios. These larger LiveTouch zones can be treated as a single multi-camera production bank, allowing instant access to more cameras and feeds than any other system.

LiveTouch is tightly integrated with SAM's 4K editors eliminating the need to move media and breaking the physical link between replay and editing workflows. This offers innovative new 4K production workflows completely unique in the industry. The LiveTouch panel has a compact design with tools to emphasize and enhance usability. Not only does it feature familiar placement of key buttons, it also offers an intuitive touch-screen making highlights and playback easier than ever before.

LiveTouch 4K is designed for the demanding sports and live studio environment and is a complete package ready for action.

SNELL ADVANCED MEDIA

IQMIX25 — Multichannel IP Transceiver

3G/HD/SD-SDI Multichannel 10 GbE/25 GbE IP Transceiver

The IQMIX25 is a multichannel video over IP transceiver developed for use within low-latency and high-bandwidth Ethernet IP networks. Using RTP VSF TR-03, TR-04 and SMPTE 2022-6 encoding and encapsulation schemes, along with either Clause 74 or Clause 108 FEC, enables the IQMIX25 to encode or decode up to 16 SDI signals and transport them over redundant 25 GbE links (IQMIX25 is also upgradeable to support SMPTE 2110).

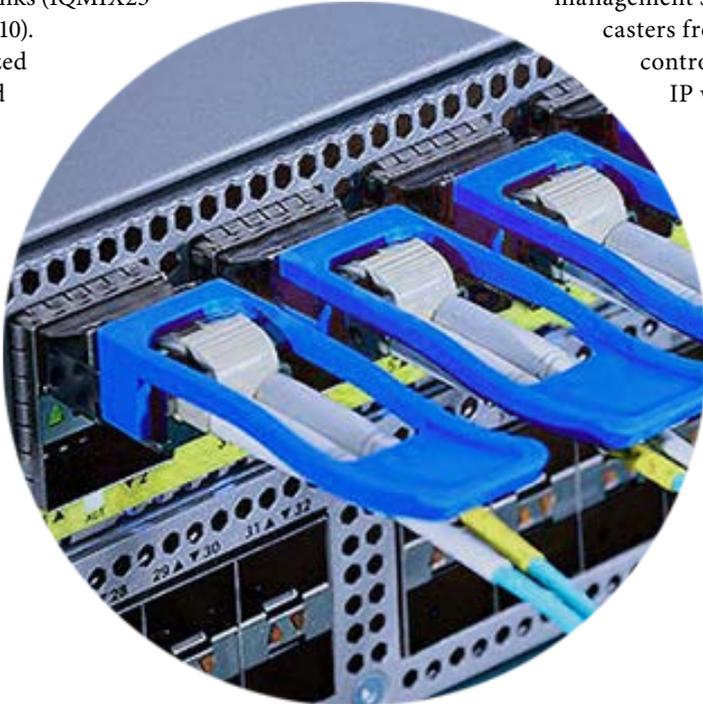
IQMIX25 provides frame-synchronized SDI outputs along with both compressed and uncompressed modes of IP operation. Using SMPTE-2042 (VC2) lightweight compression allows for high-quality signal carriage while optimizing bandwidth requirements, and sending signals uncompressed provides best quality transport although at the expense of bandwidth. Encapsulation of signals in a SMPTE 2022-6 trans-

port stream provides compatibility with other video over IP solutions.

IQMIX25 fully integrates with remote control and monitoring systems to provide easy setup and real-time information on signal presence and status for each channel. It's also fully compatible with

SAM's new broadcast centric IP routing and network management solution designed to migrate Broadcasters from a traditional baseband routing and control environment to new Hybrid SDI and IP workflows.

Amongst other key features, IQMIX25 supports unicast as well as IGMPv3 source specific multicast, allowing point to point operation or transmission in multicast groups. There are also low delay mode and independent H & V offset available for each channel along with up to two frames of video delay, and up to 255 ms of audio delay.



SNELL ADVANCED MEDIA

Alchemist XF — Conversion Software

Next-Gen Media Transformation Tool Designed for the File-Based Domain

Alchemist XF is a unique file-based software product that enables unrivalled motion-compensated image transformation of valuable content for the global audience.

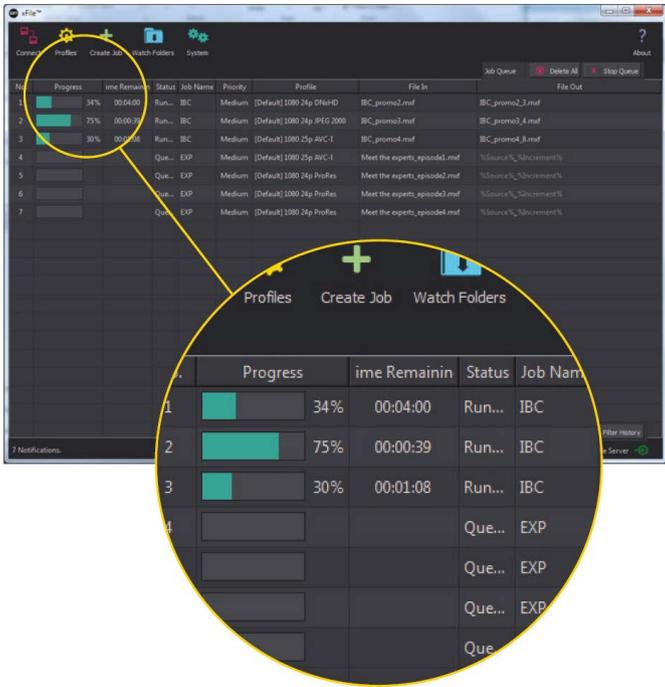
- New technology optimized to offer stunning image quality however complex the source
- Deploy it on commodity IT infrastructure from a single node to the cloud
- Simple integration via watch folders or standardized FIMS SOAP interface

With Alchemist XF, work stays in-house, saving time and money. Alchemist XF is highly scalable; it can be deployed from a single instance through to a cluster of nodes within

a data center. Dealing with the challenges of complex high-framerate sports media or low-framerate drama and feature films, Alchemist XF seamlessly and transparently converts from one framerate to another.

Alchemist XF performs every conversion including SD, HD, UHD,

4K and 8K as well as custom 32x32 to 8192x8192. It also supports every framerate including 23.98, 24, 25, 29.97, 30, 50, 49.94 and 60. Alchemist XF overcomes the conversion of mixed cadence media using Adaptive Cadence Technology resulting in smooth motion with maximum resolution, even with discontinuous 2:3 cadences.



SONY ELECTRONICS

HDC-P43 4K/HD POV Camera

A Lightweight Camera That Integrates With Existing HD Infrastructures

Sony's new HDC-P43 is a lightweight, compact and mountable point of view (POV) camera. It supports 4K HDR, HFR, the ITU-R BT.2020 color space and S-Log3 for high-brightness and high-contrast imagery. The camera features a three-chip, 2/3 inch 4K image sensor, delivering 2x slow-motion at 4K, and 8x super-slow motion in HD in conjunction with a 4K live server or 2x 4K. HDR and SDR can be output simultaneously. The HDC-P43 features the same imager as the HDC-

4300, which recently won an Engineering Emmy Award.

The highly configurable camera is ideal for studios and live productions including sports and action shoots. It complements Sony's current line of production technologies including the HDC-4300 and HDC-4800 4K/HD live camera systems, the XVS-8000 4K/3G/HD/SD multiformat video switcher and the PWS-4500 4K live server to enable efficient networked data recording, sharing and distribution with matching colorimetry.

The HDC-P43 offers all the interface functions necessary for live production and studio shooting such as tally signal, return image, and teleprompter output and features a built-in fiber adaptor by connecting with BPU-4000, BPU-4500 baseband processor unit or HDCU-4300 camera control unit.

Using single-mode fiber cable, the connection distance between camera head and baseband processor can be extended by up to three miles. This increases efficiency when there is a significant distance between a stadium and OB truck, or when shooting overhead views of a playing field.

The HDC-P43 helps to enhance the experience for viewers.

It has been already been used at some of the highest profile sporting events of the year.



pro.sony.com/bbsc/ssr/product-HDCP43/

SONY ELECTRONICS

Media Backbone NavigatorX

Asset & Workflow Management for Production, Archiving & Workflow Automation

Sony's Media Backbone NavigatorX orchestrates every phase of the workflow, breaking away from the high costs and complexities of traditional content management systems. Using standard web browsers, customers can quickly organize, manage and search for content across multiple locations.

NavigatorX's intuitive, plug-in architecture easily adapts to changing workflows and can scale to the needs of any sized organization.

NavigatorX delivers easier, quicker and more efficient asset and workflow management. Designed to suit multiple modern workflow environments, it will allow users to manage content assets in a range of formats, with flexible options for production, archiving and workflow automation.

Media Backbone NavigatorX features a simple user interface design for intuitive operation, and includes an HTML-based web application compatible with multiple browsers.

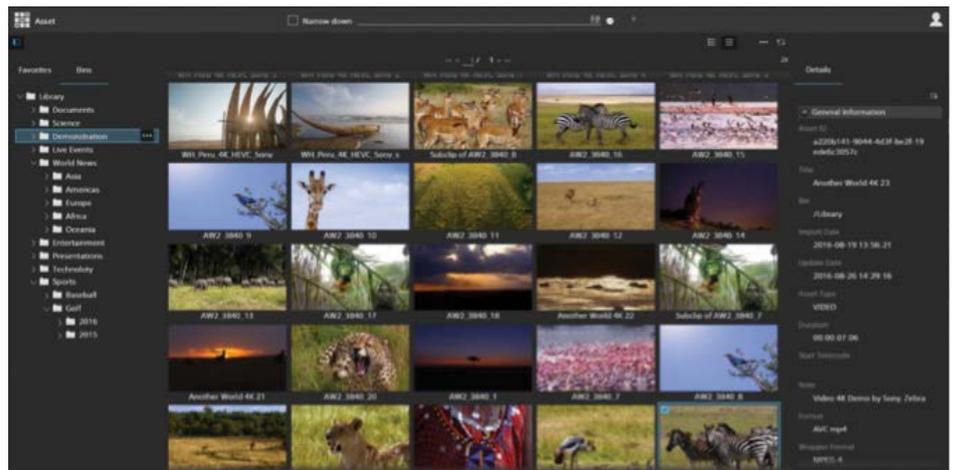
Its internal transcode engine supports a wide range of SD, HD and 4K video formats, including XDCAM HD422, XAVC and other industry leading codecs. Media Backbone NavigatorX, accelerates users' overall media workflow by making it easier to identify the correct asset in question, displaying subtitles, reading PDF files and checking still images — all within a single UI.

The advanced archive management application fully integrates with Sony's Optical Disc Archive for archiving, retrieval and partial retrieval, providing asset

status and tracking of Optical Disc Archive cartridges, even on shelves.

Media Backbone NavigatorX also helps customers overcome regular repetitive tasks. The workflow automation tool in Media Backbone NavigatorX enables users to set up a workflow with a series of simple drag-and-drop operations in a matter of hours.

Media Backbone NavigatorX integrates with various processes and associated technologies across the media production workflow. Its compatibility with industry-standard non-linear editing tools saves time for users by providing a single central point for teams to work and edit. Further time saving features include a powerful metadata search function that incorporates Boolean search queries and smart search capabilities to run previously saved queries.



STRONGBOX DATA SOLUTIONS

StrongLink Data and Storage Management

Leverage the Power of Metadata to Global Manage Both Data and Storage

StrongLink is a cognitive data management platform that combines artificial intelligence with rich metadata aggregation to enable end-to-end management of both data and storage resources. This is a new and unique approach to managing your entire data environment that automates data classification and end-to-end data life cycle management for any content, on any storage, anywhere.

StrongLink leverages the power of metadata to create a single global namespace across any storage device from any vendor, which may be accessed via standard file protocols or via a browser-based GUI. This enables administrators to optimize storage resources without impacting user access, and enables users an easy way to globally search for, access, and manage data across any storage type, including cloud.

StrongLink Eliminates Silos and Vendor Lock-In

Data management is often addressed by the industry as a storage problem that can be solved with solutions such as a gateway, a different storage technology, or through tiering or other techniques. The problem is these are often limited to a single file system, vendor, or storage type, or only address a portion of the overall data and storage resource management needs.

As data volumes soar, customers are forced to choose between locking into a single storage vendor in the hope of minimizing incompatibilities albeit at higher costs, or creating a hybrid environment that they must manage themselves. In all cases this limits choice, and adds management burden. StrongLink was specifically designed to eliminate this problem, empowering customers to globally manage their data using existing storage, or by bridging otherwise incompatible storage silos in a global namespace.

StrongLink Is Powered by Metadata

StrongLink takes a data-centric approach, coalescing multiple metadata types into an aggregated management framework. This enables StrongLink with the key to data and storage management that is

vendor/file system neutral.

StrongLink leverages these different metadata to automate and combine storage resource management, storage service management, and data management into a single unified platform. This is what we call Cognitive Data Management; powerful automation platform for both users and system administrators to search, move, and manage all their data, and the underlying storage infrastructure. It includes tools for untrained users to do queries, add custom metadata, and trigger workflows. StrongLink creates a logical abstraction of the physical storage, and can bring together multiple namespaces into one global namespace. This gives organizations global visibility into all storage resources, and the power to search, manage and orchestrate data across otherwise incompatible platforms.

By aggregating all data and metadata from multiple storage systems into a global namespace, StrongLink presents a virtual file system that spans across the entire enterprise.

- Users and applications see a file system hierarchy based upon their use case, permissions, and workflows regardless of which storage silo the data lives.
- The StrongLink policy engine automates

secure data placement, to ensure data is available in the correct storage and location at the right time.

- Data can be migrated to new storage without disrupting the user's workflow.
- Utilization patterns can be monitored to ensure that stale idle data is not stranded in expensive primary storage, and is automatically migrated to the right storage to accommodate data life-cycle needs, data governance requirements, etc. Multiple copies can be centrally managed by policy for on-site or offsite active archive or DR.

All of this is done transparently to users and applications. Workflows are preserved with StrongLink's metadata engines that ensure the right data is always available and accessible.

STRONGBOX LINK
COGNITIVE DATA MANAGEMENT

WHAT DOES STRONGBOX LINK DO?
StrongLink puts you in control of all your data, across any storage type, anywhere.

- STORAGE MANAGEMENT
- DATA CLASSIFICATION
- REDUCE STORAGE COSTS
- PROTECTS ALL DATA
- PAINLESS DATA MIGRATION
- ENABLES COLLABORATION

SIMPLIFY DATA AND STORAGE MANAGEMENT

REDUCE STORAGE COSTS	REDUCE COMPLEXITY	IMPROVE PRODUCTIVITY
<ul style="list-style-type: none"> Eliminate data silos Facilitate complex migrations Break free from vendor lock-in Optimize existing storage 	<ul style="list-style-type: none"> Single-pane-of-glass control panel Global storage resource management Global data management File-level deduplication 	<ul style="list-style-type: none"> Global search and access across all storage silos Metadata-driven workflows & automation Policy-based data management

WHY STRONGBOX LINK?

- Simplified data & storage management.
- Works with your existing storage.
- Open, accessible, never locked in.
- Maximize storage efficiency to reduce storage costs.
- Use storage from any vendor.
- All data and metadata are always protected.

FIND IT. USE IT. SHARE IT. OWN IT.

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STUDER

DIOS I/O Routing Automation Software

Innovative I/O Automation Software Manages and Simplifies Complex Routing

Studer by HARMAN has introduced DIOS, the first I/O routing automation software designed to manage and simplify complex routing matrices within broadcast workflows. DIOS offers a number of key features that will help broadcasters increase production efficiency and reduce workflow errors, including I/O routing management and automation, automated and redundant pathfinding, diagnostic notifications, transportation of baseband and IP data, auto-recollection of preconfigured I/O routes, offline configuration capabilities and more.



www.studer.ch/en-US

STUDIO TECHNOLOGIES INC.

Model 5422 Dante Intercom Audio Engine

Creates Party-Line Circuits for Dante Applications

The Model 5422 is a high-performance, cost-effective solution for creating party-line (PL) intercom circuits when used with Dante-compatible products. Using Dante audio-over-Ethernet technology with AES67 support, the Model 5422 provides the flexibility to be used in a variety of broadcast-related on-air, talent cueing (IFB), audio mixing and specialized interfacing applications. The unit features low-latency 32-bit digital processing for excellent sonic quality.

Unlike general-purpose Dante digital matrix devices, the Model 5422 provides a set of audio input, processing, routing and output resources that can be optimized to allow direct support for many commonly-required broadcast and intercommunications functions, such as intercom, talent cueing and interfacing functions.

Only a power source and an Ethernet network connection are required for the Model 5422 to provide a powerful set of resources for a variety of Dante installations. These include fixed and mobile broadcast facilities, post-production studios, commercial and educational theater

environments, and entertainment venues. It is compatible with many Dante-compliant devices — intercom belt packs from Studio Technologies, such as the two-channel Model 370, the recently-announced Model 371, and the four-channel Model 374. When used in conjunction with the 5422, the Studio Technologies' Models 214, Model 215 and Model 216 Announcer's Consoles can be flexibly configured to support many on-air and live-event applications. The Model 5422 will function directly with these and other Dante-supporting devices, including matrix intercom systems, audio consoles, wireless intercom base stations and commentator consoles.

The Model 5422 is available in two versions — one with 32 input and output channels and the other with 64 input and output channels. Dual Gigabit Ethernet interfaces allow switched, redundant and split Dante operation, with web-based configuration and network-enabled software updating. The unit features a lightweight enclosure with single-rack-space (1U) mounting and powering by way of AC mains and 12 volt DC.



www.studio-tech.com/product_m5422.html

SWITCHCRAFT INC.

Ultra VideoPatch Mid-Size 24 GHz Patchbay

Low Return Loss Through 24 GHz and 75 Ohm Characteristic Impedance

As video resolutions climb through 8K, the broadcast industry has demanded signal patching solutions able to handle extremely high frequencies, and Switchcraft's MVP32K1UHD is an industry first.

SD/SDI-, HD/SDI-, UHD/SDI-, HDR-, 4K- and 8K-compliant and beyond. The Ultra VideoPatch™ line is a full line of 24 GHz video patching solutions: Mid-Size/Mini-WECO single jacks, 2x32 1RU patch bay, patch cables, looping plug, terminating plugs and BNC connectors.

The MVP32K1UHD is preconfigured with alternating short and long single video jacks (non-normalled, non-terminated) which were designed to eliminate crosstalk issues that may arise with higher frequencies and supports 30,000 life cycles.

The all-metal rack housing is constructed in anodized bright blue pewter to assist in

distinguishing between Switchcraft's popular 3GHz versions and comes with a cable tie bar and marking strips for insert designaton.

This innovative product line meets and exceeds SMTPE ST 2081-1 and ST 2082-1 with low return loss beyond 24 GHz and 75 ohm impedance. The 24 GHz Ultra VideoPatch™ represents a giant leap forward, enabling innovators in the broadcast industry to deliver video quality beyond what is possible today.



www.switchcraft.com/productssummary.aspx?Parent=1173

TEAMCAST

VORTEX II DualCast ATSC 1.0/3.0 Exciter

For Preparing the Forthcoming Spectrum Repack and ATSC 3.0 Migration

VORTEX II comes as a ready-to-use standalone rack modulator/exciter, specifically designed to be integrated inside new or existing DTV transmitters, for immediate commercial operation in ATSC 1.0 and future operation in ATSC 3.0.

Its DualCast modulation capability meets broadcaster’s requirements for a smooth and straightforward transition from ATSC 1.0 and ATSC 3.0 using the same hardware platform.

In ATSC 1.0 operation, VORTEX II integrates unique and unmatched precorrection techniques to compensate “Very-Sharp Tuned” filter nonlinearities. Obviously with the ongoing Spectrum Repack it is expected that digital adjacent channel cases will become more of a requirement to accommodate all U.S. broadcasters. Thus, more complex and “Very-Sharp Tuned” filters will be required and will have to be properly precorrected by the modulator (see Note 1). In ATSC 3.0 operation, VORTEX II integrates a completely new, state-of-the-art modulation core developed by TeamCast, meeting the requirements of the complex IP-centric and evolutionary ATSC 3.0 standard, while benefiting of the unique OFDM modulation and single frequency network expertise developed by TeamCast over the past 20 years (see Note 2).

We believe that VORTEX II is definitely apart from other exciters because:

- Its unique design makes it an absolute futureproof solution for the broadcasters willing to go smoothly through transitions,
- Its DualCast operation enables TV broadcasters to invest in a longer term and futureproof exciter solution, in a context of major transitions such as the introduction of the new ATSC 3.0 standard and the TV Spectrum Repack
- It offers an unprecedented digital precorrection feature allowing the use of Very Sharp Tuned filters to meet the requirements of the ongoing Spectrum Repack
- It offers a straightforward integration path in existing or new transmitters with dedicated RF controls, full local and remote monitoring and control features and proven reliability.

Note 1: Comark TeamCast and Dielectric jointly presented a paper at the NAB Show: “Very-Sharp Filter Enhanced Compensation in ATSC 1.0 & ATSC 3.0.”

Note 2: TeamCast’s CTO Gerard Faria also presented a paper at the NAB Show: “Single Frequency Network (SFN) to Increase the Efficiency of the ATSC 3.0’s Broadcast Infrastructure.”



www.teamcast.com/products_category/terrestrial-broadcasting

TEKTRONIX

Sentry Cloud

Seamless Video Quality Assurance for Broadcast OTT Workflows in the AWS Cloud

As shown for the first time at the 2017 NAB Show, Sentry Cloud enables broadcasters to maintain the same level of video quality assurance they expect when video distribution moves to the cloud. In the demo, Sentry was shown monitoring live video through the AWS Elemental cloud covering all four major steps in the video workflow: ingest, processing, packaging and OTT content delivery.

Sentry Cloud gives broadcasters a scalable monitoring and reporting solution that can track multiple programs simultaneously and in real time. Sentry provides alarm to warn broadcasters of potential problems before they impact customers and provide engineering staff with diagnostic information to quickly remedy problems. Using a 90-day database of detailed operational data, Sentry gives operators, engineers and senior group management key performance information they need to make smart decisions about their operations and network performance.

Sentry is a software-defined, scalable monitoring solution. At the entry level, Sentry can provide Quality of Service (QoS) monitoring and alarming of all OTT streaming content. With simple software upgrades, Sentry capabilities can be extended to include Quality of Experience (QoE), Perceptual Video Quality (PVQ), CALM and regulatory compliance alarming, measurement and reporting. Sentry can monitor streams containing HEVC, H.264, JPEG2000 encoded content in either OTT or linear formats.

In the NAB Show demo, video streams originating in Portland, Oregon from Elemental, an Amazon Web Services company, were ingested into the AWS cloud using AWS Direct Connect. Sentry Cloud monitors multiple steps of the live video workflow, including video processed from Elemental Cloud and streams delivered by Amazon CloudFront CDN for true video QoE and picture quality. When considering a move to the cloud broadcasters often have the follow concerns:

- The broadcaster has always controlled their video until handoff
- How do they assure it works on the cloud?
- If there's a problem on the cloud, should they just trust the cloud provider to find and fix it, or deploy tools for video diagnostics?

- Cloud streaming companies confirm the “packets are received and sent,” but don’t check the video quality
- Who is checking for video errors, advertising issues, blackout or freeze issues, etc?

Sentry Cloud address the above concerns by providing:

- Quality assurance for OTT cloud networks
- Monitoring at AWS ingest, transcode and CDN points
- The ability to diagnose live video cloud workflows

Currently, this level of monitoring is not available in the cloud. Sentry Cloud solves a major concern, opening the door for more broadcasters to take advantage of cloud offerings, helping them to lower costs and improve scalability and reliability.



www.tek.com/video-quality-monitors

TELEMETRICS

PT-HP-S5 Robotic Pan/Tilt Head

New Robotic Head Brings On-Screen Creativity to Production Applications

Telemetrics PT-HP-S5 unveils its lower cost addition to its popular series of robotic servo-controlled pan/tilt camera support systems that brings new value and operational performance for robotically controlled cameras and automated production studios.

The new PT-HP-S5 Servo Pan/Tilt Head enables professionals working in sports, mid-size studios, houses of worship, government/educational installations, live events and reality TV production to lower operational costs while simultaneously improve production values and reduce technical errors. It can also be set up to automatically identify and warn operators when load balancing and power issues are detected.

The PT-HP-S5 is now part of Telemetrics' fifth-generation S5 camera control product portfolio. Compared to the existing PT-LP-S5, the PT-HP-S5 is targeted at smaller production studios with limited budgets but still needing unique POV shots to add value to their production. It can accommodate any box-style camera and lens up to 40 pounds and is fully 4K-ready with embedded fiber connectivity as a standard feature.

While compact in size and easy to install, the PT-HP-S5 utilizes high-end servo motors that provide ultra smooth motion even with fast acceleration and deceleration, and supports complex key-frame-based programmed moves. In addition, the PT-HP-S5 supports a variety of camera lenses and a small teleprompter, and features the ability to launch an unlimited number of presets. It also provides extremely quiet and fast operation (up to 100 degrees/second). When coupled with the Telemetrics RCCP-1 or RCCP-1A, a single remote operator can perform a full range of creative camera moves, including control over axis pan, tilt, zoom, focus, elevation and trolley functions.

Other important features include:

- Automatic camera and lens detection
- LED status indicators for power and health
- Local buttons to drive any axis and set soft limits
- Embedded red and green tally
- Web application for simple control, configuration and health monitoring
- Integrated camera control interface — no camera CCU required
- Clean cable management
- Controllable over Ethernet interface with support for third-party devices.



www.telemetricsinc.com/products/camera-robotics/pan-tilt-heads

TELESTREAM

Wirecast Gear, Live Streaming Production

Fully-Configured, Turnkey Live Streaming Production System Removes the Hurdles

Wirecast Gear is a portable computer workstation fully configured for live event production and streaming. The easy-to-use system allows anyone to broadcast professional live productions in a matter of minutes with a fully-configured system built for live event streaming. Wirecast Gear comes installed with Wirecast Pro live streaming production software. It is ideally suited for marketers, educators, corporate and online trainers, event producers, sports broadcasters, worship service staff, news gatherers and anyone who wants to deliver professional live streamed productions out of the box.

Portable, convenient design Wirecast Gear comes with four professional video input ports with options for either HDMI or SDI, housed in a compact, powerful hardware system. At only 9.85 inches deep and taking up 1.3 rack units, the versatile Wirecast Gear workstation can be inserted into a travel case or fitted with the included rubber feet and placed on a desktop. Solid-state drives, as opposed to traditional spinning hard drives, makes Wirecast Gear ideal for transport, less prone to failure and guarantees maximum performance.

Robust computing power Wirecast Gear is built on a Windows 10 Pro 64bit platform with i7 Intel processors, 16GB of memory and a 250GB system drive. The unit also includes multiple network connectors, USB-C ports, as well as digital display outputs to create an optimal production environment.

With Wirecast Gear, you don't have to be a computer technician to start streaming. You can take this computer out of the box, put it on your desk, plug in some cameras, and start streaming a live event. But, the other great thing about this system is that it's a solid Windows 10 Pro 64-bit computer. So you can use Wirecast Gear in your live production environment for live streaming, but then you can also use it as a workstation. It's a streaming appliance and a workstation, which makes it a very appealing ROI proposition. Powerful live production features With Wirecast Pro pre-installed on Wirecast Gear, users can start streaming the moment it comes out of the box using the powerful production features of Wirecast including:

- Multi-camera live switching
- Mix live camera sources as well as video, images, computer desktops and more
- Instant replay
- Playlists

- Built-in titles
- Chroma key support
- Virtual sets
- Live scoreboards and more



Wirecast's built-in encoding engine allows users to stream high-quality H.264 video and AAC audio over RTMP, RTP and Windows Media protocols for maximum flexibility.

Wirecast Gear also comes installed with Switch Plus (to enable users to play, inspect and correct all their media files) and NewBlue Titler Live (to easily create or edit fully animated titles and lower thirds). Users can stream directly to 30 built-in destinations including Facebook Live, YouTube Live, Microsoft Azure, Akamai, DaCast, Wowza, as well Periscope/Twitter and record a version for later use. With recently announced support for the Periscope/Twitter API, any user, from tech-savvy consumers to online broadcasters, can employ Wirecast to stream live full motion video to Periscope.tv, which will appear natively within their Twitter feeds. The combination of Wirecast and Periscope/Twitter will appeal to a range of markets, especially online broadcasters that want to leverage Twitter feeds for live video.



www.telestream.net/wirecast/wirecast-gear-us.htm

THE TELOS ALLIANCE TV SOLUTIONS GROUP

Linear Acoustic AMS

Real-Time Authoring, Rendering and Monitoring of Advanced Audio Programs

Linear Acoustic AMS Authoring and Monitoring System from the Telos Alliance TV Solutions Group is a comprehensive solution for real-time authoring, rendering, and monitoring of advanced audio programs for the ATSC 3.0 Digital Television System. The audio system in ATSC 3.0 provides listeners with a personalized, immersive audio experience using Next Generation Audio (NGA) technologies, including MPEG-H. AMS simultaneously delivers advanced audio for ATSC 3.0 broadcasts and 5.1-/2-channel audio for ATSC 1.0 broadcasts.

The Linear Acoustic AMS web interface controls the interactive features of MPEG-H offered to the viewer. Using smart metadata and Linear Acoustic APTO loudness control, AMS facilitates easy audio mixing and authoring operations, even in the most demanding production scenarios. Individual audio elements are combined with user specified metadata to create immersive and personalized audio programs for the viewer. The AMS web interface allows the authoring engineer to easily control the interactive features of MPEG-H offered to the viewer, and build presets for different listening experiences. This enables viewers to personalize their sound experience for optimal playback, from mobile devices to immersive home theaters.

The system provides a web interface for the following functions:

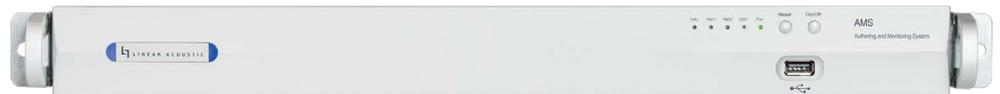
- Device configuration and status
- Monitoring control
- Input/Output routing
- Audio mixing and object panning
- Loudness processing
- Authoring configuration and control
- Loudness Meter
- User's interactivity
- Level Meter

Authoring Made Easy

Authoring an MPEG-H audio stream using the web interface is as simple as assigning the 15 available mono inputs to the 10 available channel groups. From defining music beds, identifying independent objects, or grouping objects to be switched by the user, full control is available.

Controls include:

- Object position
- Interactivity controls
- DRC • Upmixing from mono/stereo to 5.1 or 7.1
- Loudness parameters
- Monitor control



Comprehensive Real-Time Monitoring

Linear Acoustic AMS can be used in production to actively author and monitor metadata, or in other parts of the broadcast chain to monitor and validate audio streams containing a control track which were authored upstream. In both scenarios, AMS is capable of outputting 15 channels of discrete audio with a metadata control track, a 5.1-channel rendered output, two-channel rendered output, and a dedicated monitoring output, all simultaneously.

Loudness Adaptation by Linear Acoustic APTO™

Linear Acoustic AMS is equipped with Linear Acoustic APTO, the state-of-the-art loudness adaptation technology designed to carefully control audio levels in a way that preserves the transients, sonic image and artistic intent of the source, while ensuring loudness consistency and compliance for any desired target.

The xNodes xFactor

The Telos Alliance xNode family of AoIP devices offers optional analog, AES/EBU, GPIO logic, and SDI I/O, all with full Livewire+ AES67 audio over IP support.

Telos Alliance SDI xNodes can de-embed 3G/HD/SD-SDI inputs, extracting up to 16 channels of audio to the Livewire+ AES67 port. The audio can be re-embedded into the SDI output stream with full video delay compensation for each SDI input, ensuring that audio video synchronization is maintained.

Using the web interface, up to 36 outputs may be configured, including 16 channels of authored audio plus control channels, up to 12 channels for monitoring, and two additional sets of output channels for rendered broadcast outputs.



THE VITEC GROUP

Autoscript Intelligent Prompting

Industry's First Fully IP-Based End-to-End Teleprompting Solution

The IP revolution represents a leap forward for modern broadcasting, bringing new flexibility, cost savings, and efficiencies to virtually every aspect of production. Until now, however, teleprompting systems have tied broadcasters to the use of video and serial cables. By and large, studios are still using USB, serial, or video cables to connect controllers to the prompting engine, while video connections are required to deliver the prompting output to a traditional monitor. With its all-new Intelligent Prompting system, Autoscript is moving beyond the limitations of traditional systems to provide the broadcast industry's first fully IP-enabled end-to-end teleprompting solution. Intelligent Prompting gives broadcasters the flexibility to pool resources anywhere in the world, integrate simply through an IP network, and implement fail-safe redundancy measures for live broadcast. Adding to these benefits are hardware improvements that reduce weight by over 30 percent and setup time by up to 75 percent. Autoscript avoids the use of video over IP — and its associated lack of bandwidth, latency issues, and synchronisation errors — by generating the script inside every Intelligent Prompting monitor and enabling the monitor to produce the video output directly. Since much less data is sent over the IP network, each monitor remains in constant communication with the master application to ensure ongoing, perfect synchronization and easier operation.

As a truly seamless IP solution, Intelligent Prompting means more flexible and simplified integration since equipment setup is tied only to network availability. A single operator can control the script in multiple locations and instantly switch control to another operator anywhere in the world when necessary. This IP connectivity also provides powerful redundancy, since a second master



software application can be installed and then take over control seamlessly if required. Intelligent Prompting includes an updated version of Autoscript's WinPlus teleprompting software, adding ease-of-use improvements and new functionality such as a device status monitoring and group updates. By taking advantage of existing technology and adding features necessary to manage an IP workflow, Intelligent Prompting ensures that broadcasters can avoid the downtime and errors associated with learning a new system and benefit from simple and centralized management of all devices. The Intelligent Prompting hardware includes a single prompt monitor platform for the intelligent EVO-IP high-bright and E.P.I.C. prompters, with a slim, lightweight design. The E.P.I.C. Talent Monitor is detachable to give broadcasters the flexibility to upgrade the EVO-IP prompt monitor to an E.P.I.C. system as necessary.

The Intelligent Prompting mounting system and carbon fiber hood have been meticulously designed to ensure maximum stability and minimum weight, reducing payload issues for

the camera support, problems with excess movement at the end of transitions, and oscillations at the end of robotic movements.

The rail-based system features quick release mechanisms for both the camera and monitor, ensuring rapid assembly.

The complete monitor, hood and mounting assembly has been carefully calculated to minimise the number of parts, vastly improve setup time, and improve access to the lens.

Finally, Autoscript has developed a powered-over-Ethernet hand controller with massively improved ergonomics, which will impact the ease of use for thousands of prompter operators on a daily basis.

By designing every component of Intelligent Prompting around an intelligent IP workflow, Autoscript is helping this critical function adapt for next-generation broadcast operations. The fully scalable IP prompting architecture ensures benefits for users at any stage in their transition, while also opening the door for continuous workflow improvements.



autoscript.tv/intelligent-prompting

THE VITEC GROUP

Vinten μ VRC (microVRC) Controller

Complete Control Solution for Smaller Studios Demanding Broadcast-Quality

The amount of content being produced and consumed has increased exponentially, while the cost of production has fallen significantly. This is bringing about a sea change in the studio market, as production studios of all sizes demand a broader range of broadcast-quality equipment. In particular, smaller broadcast studios are driving a powerful demand for smaller pro-video cameras and professional robotic camera solutions that can meet their budgets.

Vinten, a world leader in robotic camera support systems and a Vitec Group brand, has capitalized on these trends by introducing the all-new Vinten μ VRC (microVRC) controller. As the perfect companion to Vinten's Vantage compact robotic head, the μ VRC controller ticks all the boxes on smaller studios' wish lists: powerful control over high-end robotics and third-party PTZs, a highly attractive price point, and a completely modular solution that can grow and adapt as their requirements change.

Studios are now able to add on functionality according to their needs; for instance, they can choose which camera and lens would be best for them now, and then further adapt the system down the road — all while staying within budget.

The first of its kind, the μ VRC controller allows studios of all shapes and sizes to control high-end robotics and third-party PTZs. Aimed at studios looking for a complete, ergonomic robotic solution that suits their individual budgets, the μ VRC controller offers unmatched flexibility in content creation and broadcast-quality movement and control. Working together, the Vantage compact robotic head and μ VRC controller provide a flexible, ergonomic solution that lets any studio leverage high-quality Vinten robotic systems and reap the benefits of perfect control.

High-End Functionality on a Small Studio Budget

With easy integration, the μ VRC controller is ideally suited for customers who require control over the Vantage compact robotic head or third-party PTZs, allowing customers to control multiple units for various shooting angles. As an easy-to-configure, modular version of Vinten's high-end HD-VRC software, the μ VRC controller gives users access to various features including camera select, preset shots, essential shading, playback and video switcher integration that easily connects with third-party switchers. For added convenience, the controller's easy-to-read touchscreen and user-friendly USB joystick panel offer the option to personalize the function keys. By using plug-and-play technology, the μ VRC controller's auto-discovery setting also enables a quick setup of the user's robotic devices.

Modularity to Scale With the Studio

For ultimate flexibility, the Vinten μ VRC controller is a scalable solution that allows users to adapt and increase the controller's functionality based on their specific needs and budget. By purchasing additional licensing modules, users can expand the software up to all of the features found in Vinten's high-end HD-VRC system. Add-ons include third-party PTZ integration, the ability to add support for ICE, functionality for additional Vantage heads, or full compatibility with the Vinten automation interface. The studio market is continuing its



rapid evolution, and even non-broadcast organizations are demanding ever-more-sophisticated technology solutions to meet their consumers' demand for more types of content. With solutions such as the μ VRC controller, Vinten is right there with solutions that enable studios of all shapes, sizes, and capabilities to take advantage of the latest advances in robotics technology. The one-two punch of the Vinten Vantage and the μ VRC controller open up the studio market to a whole new range of possibilities and broadcast applications for nontraditional broadcasters such as houses of worship, green screen environments, and enterprise video.

www.vinten.com/en/product/micro-vrc

TORQUE VIDEO SYSTEMS

DVStor Incremental File Transfer

Near-Live Remote Acquisition and Transfer

DVStor remotely acquires full resolution content and efficiently transfers it to a central “catcher” machine. This is ideal for news organizations monitoring overseas news broadcasts and want full resolution clips back at their home studio.

Conventional “ingest and transfer” solutions must wait for the entire clip to finish recording before file transfer can begin. However, DVStor is able to start file transfer shortly after the clip has begun.

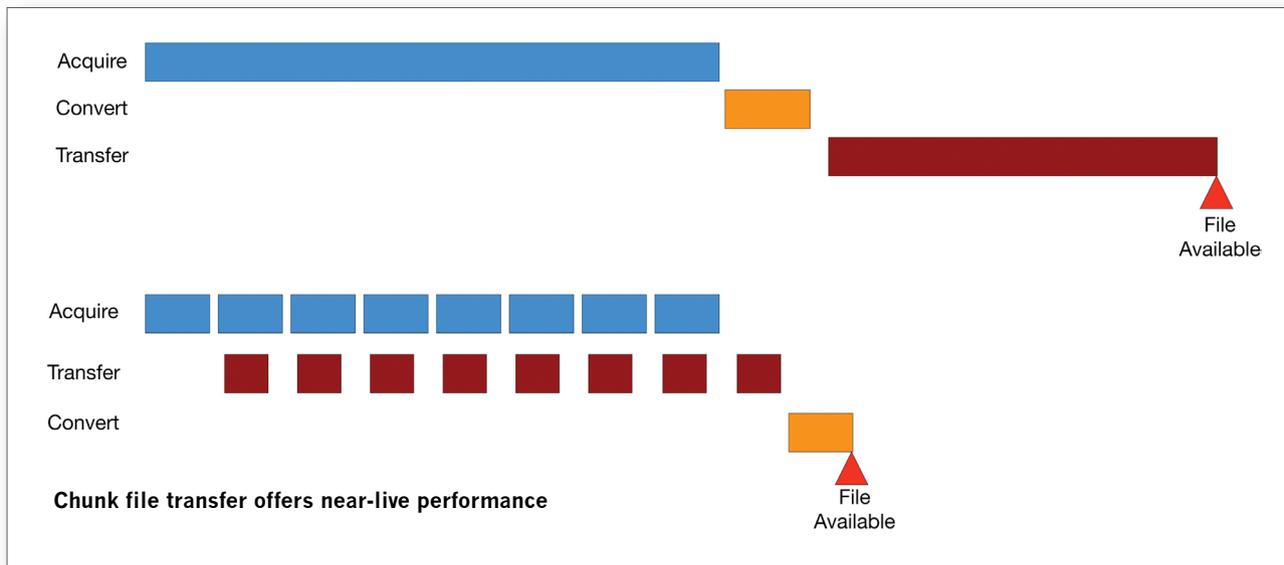
Recording is done in native transport stream format — meaning no format conversion or loss of resolution at ingest. Full resolution, with complete metadata, is transferred. In addition, DVStor lets you specify

the acquisition of an entire multiplexed transport stream, or only one or two services within it.

File transfer is over standard FTP.

The product supports flexible, event-driven scheduling; letting you set up periodic schedules to acquire and transfer specific programs daily, weekly, etc. Scheduled events can also be set with an expiration date, making the system ideal for catching the daily summaries of global sports events, etc.

On the “catcher” side, DVStor easily integrates with common workflows, making integration into your existing system a snap.



TRADECAST.TV

TradeCast.tv: Your Own Online TV Channel

The Only Solution for Easily Distributing and Monetizing Your Content

TradeCast.tv introduces the only end-to-end solution for easily managing, distributing and monetizing your own interactive TV channel and broadcasting network.

In a world where traditional TV broadcasting and publishing are pressured by a handful of global video and social platforms wanting to rule the game, TradeCast offers an end-to-end solution to easily distribute, manage and monetize content. The TradeCast platform enables anyone — any company, brand, entrepreneur or celebrity — to start their own cloud-based broadcasting network and stay in control of all their video content.

TradeCast.tv offers a turnkey solution, easy to use and fully scalable. Including a cloud-based linear (scheduled) interactive TV channel, on demand and live broadcasting; To any screen, even to social media (with a data harvesting nature). Our clients own their data to create real value. And with a licensing plan that completely slashes tradition, TradeCast.tv aims to be the best possible infrastructure solution on the global cloud-based video market.

TradeCast enables truly anyone to start an online interactive broadcasting network, and to get in control of their content. With first target markets in sports, special interest niche markets, traditional broadcasting and business (ROI) video solutions. TradeCast is getting traction on a global scale, from small businesses to enterprise companies. With the TradeCast platform your content instantly becomes more valuable and your target audience bigger and better served.

A Few of Your Current Clients:

- Glamour (publisher Gruner+Jahr): www.glamourbeauty.tv
- FC Groningen (Dutch Eredivisie soccer club): www.fcgroningen.tv
- Prins Petfoods (pets e-commerce): www.lifestyleforpets.tv
- Discovery Networks (launching niche/hobby/special interest channels)
- Royal Dutch Warmblood Horses (global channel in equestrian sports): www.kwpn.tv



Awards/Plaudits Received So Far:

- Winner Crossmedia Awards 2016 (The Netherlands)
- Winner Start(up)er of the Year 2016 Zwolle Area (The Netherlands)
- Winner Ziggo (Liberty Global) Dragon's Den 2016 The Next Web Conference '16 Startup Top 20 Europe
- Computable Awards Dutch Startup of the year (nominee)
- Accenture Innovation Awards (nominee)
- Innovation Top 100 (Nominee)
- Chosen by Dutch government as part of Top 30 entrepreneurs for CES 2017

We're based in The Netherlands, where we have great team of people continuously improving our platform and adding new features and connectivity. We truly aim to make TradeCast the number one infrastructure solution on the global cloud video market. Right now, we're preparing for our worldwide launch in 2017 (and world domination).



www.tradecast.tv

TRIVENI DIGITAL

ATSC 3.0 Starter Kits

Get Ready for ATSC 3.0 in a Real-World Environment

The ATSC 3.0 standard is on the verge of completion, and it will provide broadcasters with a wide range of benefits based on the ability to comprehensively distribute a hybrid mix of broadcast and broadband IP content to fixed and mobile receivers for the very first time. However, it will also require a steep learning curve for broadcasters.

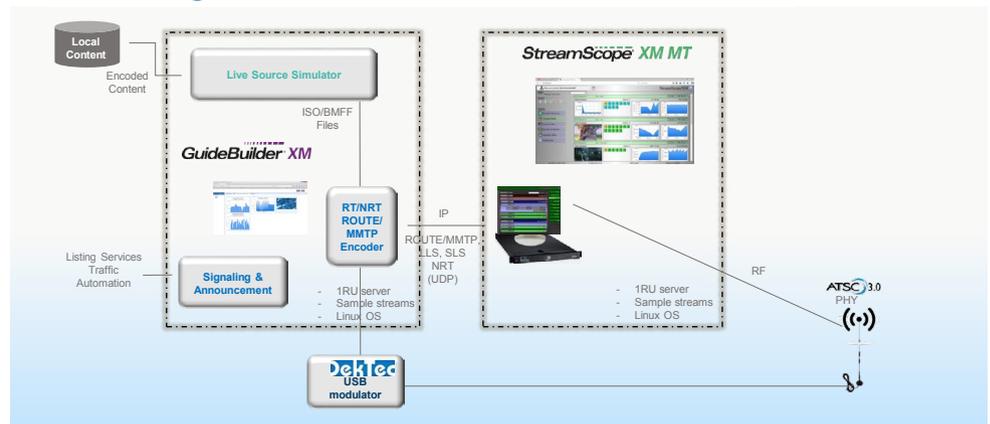
To help bring broadcasters up to speed with the new broadcast television standard in a real-world environment, Triveni Digital has joined forces with other technology leaders and launched ATSC 3.0 Starter Kits. The starter kits encompass everything from file-based monitoring to live encoding and over-the-air transmission options, leveraging Triveni Digital's GuideBuilder[®] XM signaling and announcement generator, ROUTE/MMTP encoder and StreamScope[®] XM MT service quality assurance system, along with third-party technology from trusted ecosystem partners.

The starter kits will be available in several options to meet broadcasters' unique infrastructure requirements and knowledge of the ATSC 3.0 standard. The entry-level package includes Triveni Digital's StreamScope XM MT, without any physical inputs, for file-based analysis. Using this solution, broadcasters can gain greater insight into the physical structure of ATSC 3.0. StreamScope XM MT is the industry's most advanced monitoring and analysis systems to support ATSC 3.0 candidate standards, including ROUTE and MMTP encoding options. Using StreamScope XM MT, broadcasters can perform detailed analysis of ATSC 3.0 streams and data structures. By enabling broadcasters to analyze ATSC 3.0 services, and quickly detect, isolate, and resolve issues, StreamScope XM MT makes it practical for broadcasters to launch early deployments and trials of ATSC 3.0, ushering in a new era of digital television that will leverage the dramatic improvements in the underlying broadcast technology.

Option two expands upon the entry-level package by including Triveni Digital's GuideBuilder XM, ROUTE/MMTP encoder and a live source simulator. More advanced starter kits will feature additional elements of the ATSC 3.0 workflow such as encoding, packaging, modulation, gateways, and excitors, from third-party technology partners. Triveni

Digital's GuideBuilder XM signaling and announcement generator offers unified functionality per ATSC 3.0 candidate standard, along with support for legacy standards such as ATSC 1.0 PSIP and DVB-SI and ATSC 3.0 MMTP and ROUTE encoding protocols. Providing support for the widest range of third-party interfaces and deployment architectures available, GuideBuilder XM enables can automatically ingest schedule updates from all popular listing services, apply them to any number of services, and output program and service guide data to third-party multiplexers. In addition, broadcasters can manage metadata across multiple

Triveni Digital ATSC 3.0 Starter Kit



Triveni Digital Proprietary and Confidential, All Rights Reserved
www.TriveniDigital.com

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stations while maintaining a seamless workflow during the transition to ATSC 3.0. Using the system for channel sharing, broadcasters can unify the generation and management of metadata via centralized, distributed, or cloud workflows.

Triveni Digital's ATSC 3.0 Starter Kits deserve to win this award because they are the first complete ATSC 3.0 solution for broadcasters' various needs — from file-based monitoring to OTA reception. Becoming familiar with the new standard now, in their own facilities, broadcasters can ensure the transition is fast and smooth. Triveni Digital will fully integrate the starter kits into broadcasters' facilities to ensure a seamless ATSC 3.0 deployment and testing process.

trivenidigital.com/atsc3/index.php

TSL PRODUCTS

MPA1 Solo SDI Audio Monitor

Compact and Lightweight Design Features 'Scroll-to-Hear' Monitoring of All

Part of the MPA (Monitor Plus Audio) range, the MPA1 Solo SDI provides users with an intuitive yet flexible audio monitoring tool that enables users to view all 16 embedded channels simultaneously while allowing any channel to be selected for monitoring.

At only 1RU high and 100mm deep, the MPA1 Solo SDI is ideal for use in the most confined environments such as outside broadcast vehicles and small flight-packs. The MPA Solo SDI source, channel names and system parameters can be managed remotely over an Ethernet network using the built-in web server. Audio levels, signal status and format can all be viewed remotely via the web

GUI (graphics user interface).

The prevalence of multichannel and multilingual services among TSL's customers has led to the development of a product that provides "at a glance" monitoring of all embedded audio, thereby helping customers maintain consistent production quality. The most efficient workflow for any production environment can be secured using the web GUI to "lock-down" any MPA Solo SDI, preventing unintentional or unwanted changes to its configuration.

The HDMI output provides convenient confidence monitoring of the SDI video source making it suitable for checking lip sync.



www.tslproducts.com/product-type/312

TVU NETWORKS

TVU One With HEVC Mobile Transmitter

Features 0.5 Second Latency With Greater Efficiency and More Stability

TVU Networks is taking its popular TVU One mobile uplink solution a step further with the introduction of the new TVU One with HEVC mobile IP newsgathering transmitter, which supports the H.265/HEVC video compression standard. The TVU One with HEVC cellular mobile solution uses both HEVC video compression and TVU's patented Inverse Statmux Plus (IS+) transmission algorithm — which transmits HD quality video with half-second latency even in a moving vehicle. The new TVU One live video streaming solution takes advantage of the improved compression and data management inherent in HEVC encoding, using less data and performing with even greater stability than ever before.

TVU One with HEVC is available with

embedded modems and can transmit simultaneously over multiple connections, including cellular, microwave, satellite, BGAN, Wi-Fi and Ethernet. Weighing just 2.2 pounds, TVU One with HEVC offers a robust set of functions designed to fit the needs of any size live video broadcaster. With simple, worry-free operation, it delivers industry-leading video transmission resiliency and high-definition picture quality within an ultra-compact and rugged hardware chassis. With TVU One with HEVC, broadcasters can fully leverage the versatility of a small, lightweight, IP-based high-definition video field transmitter without sacrificing performance, features or picture quality. The TVU One with HEVC is in production and was shown for the first time at the 2017 NAB Show.



www.tvunetworks.com/products/tvu-one

VERIZON DIGITAL MEDIA SERVICES

Verizon Media Xperience Studio

Content Intelligence System Orchestrates OTT Workflow

Verizon Media Xperience Studio is a first-of-its-kind, cloud-based content intelligence system (CIS) that automates the online video production and distribution pipeline while offering the timely and accurate performance, revenue and cost insights essential to building a profitable OTT service. Never has it been so easy for content owners to launch, manage and monetize multiplatform video streaming services.

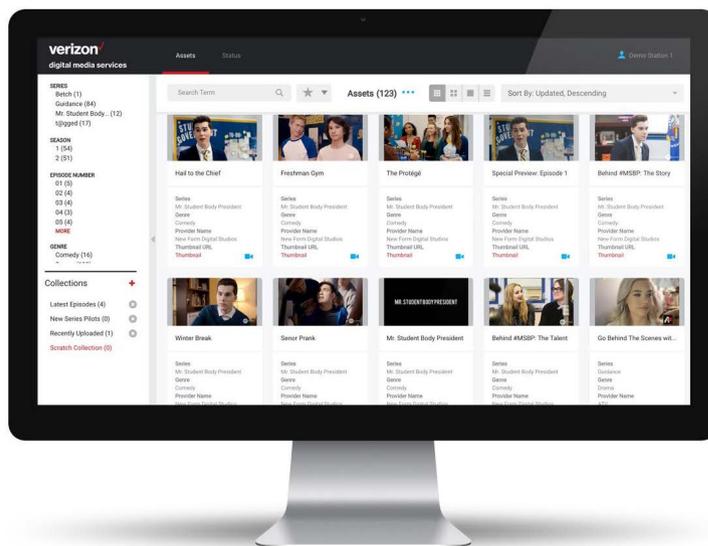
Uniting the capabilities of a content management system, digital asset management system, playout workflow system and app builder into one single cloud-based system, the Verizon Media Xperience Studio orchestrates and streamlines the movement of metadata and digital media assets through production, approval, distribution, monetization and eventual consumption by viewers on connected devices.

Managing all of these processes, this all new CIS can easily standardize and aggregate the accurate data needed by OTT providers and online video services to determine if and how their owned and licensed content makes money. With fast access to reliable insights, companies can be confident they have optimized the end-to-end pipeline, and they can be agile in offering content and services that are well-aligned with viewer demand.

Seven key functions give users flexibility in deploying the CIS:

1. **MX: Orchestration** allows users to plan content workflows and monitor their progress. Simplifying content supply chain management into one smart and highly automated end-to-end video workflow, this function enables intelligent content planning, asset and metadata management, and packaging and distribution of content.
2. **Integrated seamlessly** with Verizon Digital Media Services' Uplynk Video Streaming service, the **MX: Apps** function allows users to build, publish and maintain customized OTT application experiences on popular consumer devices. It facilitates the use of themes, branding, layouts and navigation to align the app with its target audience, as well as with the content provider's brand. Maintaining completed apps is simplified, too, as both content and UI changes for all devices can be performed without the need for coding and without requiring force app downloads.
3. **MX: Subscriptions** simplifies management of users and entitlements for SVOD, TVOD or hybrid models. Verizon Media Xperience Studio users thus can set up different business models, pricing and paywall rules around various OTT offers and packages. This function supports user identification and

- authentication management, enables management of access rights and availability to content on per-user level, and drives billing and payment.
4. **The MX: Programming** function offers tools for creating schedules and policies for content playout, availability and restrictions, making it easier to implement virtual linear channels. It also features policy, restriction and rights enforcement.



5. **MX: Syndication** streamlines the publishing of content and clips across owned and third-party OTT services, as well as social media.
6. **To enable content curation and advertising** adapted to a viewer's preferences, **MX: Personalization** allows users to tailor content recommendations based on rich metadata and user preferences.
7. **And finally, MX: Vision** tracks and monitors insights, analytics and intelligence. It removes the guesswork about an OTT service by collecting comprehensive audience metrics, so that users can build a profitable video business with data about viewer acquisition, interest and intent across every screen and partner website.

Because the CIS is modular and API-driven, users can enjoy the flexibility to integrate existing systems or work with providers that provide similar functionality. The CIS is fully integrated with existing services available in the Verizon Digital Media Services platform, including the Uplynk Video Streaming service, the Edgecast Content Delivery Network and the Volicon Media Intelligence service.



www.verizondigitalmedia.com/platform/content-intelligence-system-main-page

VISIONSMITH

SoftSpot

Variable Diffusion Means This Spot Light Is Also a Soft Light



Introducing a better way to light.

Now with SoftSpot, you can electronically transform a spot light into a soft light just by turning a knob or by DMX remote. SoftSpot is the first light with shadow control. Now the natural tradeoff of soft or hard light is at your fingertips.

With more throw than any competing technology, the SoftSpot is an ideal light for outdoor location shooting and large area studio setups. For studios looking for a big light in a small package, this is a whole new category. The remarkable flexibility of remote control over diffusion means you can have any setup you like at the tip of your finger.

For location shooting it is the easiest way to compete with the sun. It can run on your camera batteries. Now you can shoot longer with more light. These lights are ultra-rugged, and weatherproof.

The long BAR shape allows the compact light to cast soft shadows like a much larger source. At over 120 lm/w it is the most efficient way to light large areas. As a spot light it is very directional with amazing throw, then gradually dial in diffusion, and as a large soft source it is the most flattering light for its size.

visionsmith.com/softspot

VIZRT

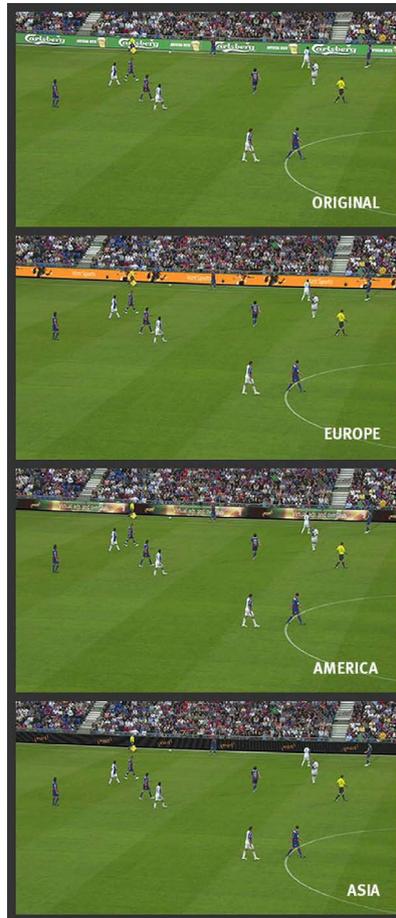
Viz Eclipse — Live Virtual Ad Replacement

Virtually Replace Field-Side Ads for Live Sports Productions

Live televised sports is a commodity that is here to stay. As technology shifts, the key differences in displaying this live content is how it can be best monetized and where it is displayed. Field-side advertising boards offer a highly visible yet unobtrusive way of advertising during a game. But what if you want to have different advertisements for different regions during the live match? Vizrt introduces Viz Eclipse — a tool that allows sports rights holders and broadcasters to virtually replace field-side advertising boards without the need of in-stadium hardware.

Viz Eclipse uses state-of-the-art keying techniques to give content owners the ability to insert targeted and unobtrusive region-specific ads into television feeds. This can generate new revenue streams for rights holders through additional regional advertising sales.

Viz Eclipse replaces existing field-side advertising boards with realistic virtual signage in



real-time and throughout live gameplay. It doesn't need any alterations to the boards themselves and requires minimal overhead to TV production workflows due to its image-based camera tracking and keying.

Using Vizrt's advanced keying techniques, the ads appear natural in the background, allowing freedom of camera movement. Players and officials can walk in front of keyed adverts without interruption to the layered insertions. Viz Eclipse can be applied to non-unicolor backgrounds, such as LED boards, and rendering filters allow for seamless blending of virtual signage with the stadium's environmental conditions.

Viz Eclipse is staged to transform the marketing capabilities of modern sport. While the initial focus will be on pitch-side advertising in football, the keying technology has the potential to revolutionize the marketing of many live productions in the long run.

www.vizrt.com/products/viz_eclipse

VMIX

vMix 19: Live Streaming Software

Produce, Stream and Record in HD and 4K

VMix has changed the live streaming game with its latest release, version 19. Along with its existing industry-leading features, reliability and power, vMix 19 has added remote guest capabilities. This new feature named vMix Call allows users to add up to eight remote guests to their live show, a first for any live production software. In just a couple of clicks a live remote guest can be added from anywhere in the world. All of the video and audio is managed within vMix to make the process very simple. vMix Call has revolutionary mix-minus technology so there are no echos and allows for full duplex audio. Traditionally, audio was the most difficult part of remote guests and vMix Call does it all for you.

Long gone are the days of needing multiple computers, hardware switchers and third-party appliances to create your own broadcast. As live streaming booms, vMix shows that it's simple for one person to create, produce, stream and record professionally all from one computer. Now with the addition of vMix Call to vMix 19, these productions can now include live guests.

Creating a live talk show that you can stream to millions has never been easier.

Guests only need a webcam and a Chrome/Firefox browser and they'll be able to connect to a live production from anywhere in the world. They're able to text chat with the host and the host is able to choose what video and audio to send them. Since release, vMix 19 with vMix Call has been used by live shows, podcasters and production companies to successfully add live guests in Full HD with great success.

vMix 19 continues to strengthen existing features and bring vMix to the forefront of live streaming technologies. Support for 4K was introduced two years ago which means that vMix was capable of 4K streaming when YouTube recently introduced 4K streaming options. You're also able to take advantage of YouTube's full capabilities by streaming from vMix at 4K 60p.

Other additions to vMix 19 include direct Periscope and Twitter integration which allows seamless streaming to the platform. This adds to

the vMix streaming portfolio which includes direct support for Facebook Live, YouTube Live, Twitch, Hitbox and paid CDNs including Wowza, Ustream and more.

vMix is also pushing the boundaries of IP video with full inclusion of NDI 2.0. vMix 19 includes the most comprehensive NDI implementation amongst live streaming software. You can input AND output video and audio sources over a local network with ease. This is great for sharing cameras, live guests, graphics and microphones across video productions.



With the addition of vMix Call, you can literally do it all with vMix 19. You can create live productions with all of the elements required for a professional show but with one piece of software and one computer. vMix is ideal for any live production situation and any budget. From a one-camera podcast to a multicam live sporting event with instant replay, vMix has you covered.

V-NOVA LTD.

V-Nova PERSEUS 2

The Next-Generation of the Award-Winning Codec

V-Nova PERSEUS is a video encoding software that shifts the bitrate curve, enabling UHD quality video at HD bitrates, HD at SD and SD at sub-audio bitrates. Building on V-Nova PERSEUS' capabilities, the next generation of the video codec enhances performance, simplifies deployment and cuts costs. V-Nova PERSEUS 2 boosts quality around the operating points that really matter to service providers, operators and consumers, including:

- 100 kbps, the minimum necessary to deliver mobile video to all consumers
- 300 kbps, for reliable enjoyable HD mobile video experiences
- 1 Mbps, for monetizable full HD mobile video
- 2 Mbps, for HD IPTV programming for all xDSL users
- 6 Mbps, for UHD movie streaming at scale
- 10 Mbps, for scalable DTH/Cable UHD sports services.

V-Nova PERSEUS 2 provides improved picture quality and computational performance, while reducing costs of the CDN and ownership per channel. With support for H.264, HEVC and VP9 as base layers, V-Nova PERSEUS 2 addresses the bottlenecks of IP video delivery, allowing for better viewing experiences across all data networks and services.

The solution enables the best service quality for cases such as:

IPTV

V-Nova PERSEUS drastically reduces bitrate requirements, enabling IPTV operators to reach 8x more subscribers with full HD services. By halving full HD IPTV service bandwidth on Sky in Italy's existing platform from 8 Mbps to 4 Mbps through a simple software upgrade, V-Nova PERSEUS enabled the service provider to enhance the viewing experience for subscribers and meet IPTV business objectives faster.

The V-Nova PERSEUS Software Development Kit (SDK) was integrated within the headend and on the installed base of Sky set-top boxes, without impacting visual quality or existing video workflows.

Mobile Video/OTT

V-Nova PERSEUS enables reliable, high-quality OTT mobile video over congested networks and bandwidth-constrained environments, as shown through the FastFilmz launch, the world's first low-cost, mobile only video streaming service.

FastFilmz deployed V-Nova PERSEUS SDK on its mobile OTT infrastructure and workflows, which reduced data rate consumption of local streaming video services by a third, providing huge savings in mobile data. By shifting the bitrate quality curve to enable HD at SD and SD at sub-audio rates, V-Nova enabled FastFilmz to launch a cost-effective service that would otherwise have been impossible. This has completely transformed mobile video access in India, offering premium video experiences to over 120 million users over 2G and 3G networks for the first time.



SATELLITE

Contribution

Tasked with contributing 4K international feeds of the 2016 UEFA European Championship for public broadcaster RAI, V-Nova PERSEUS provided lossless, low-latency UHDp50 video contribution to RAI's remote production van in outer Paris. The UHD content was provided by RAI, transmitted via Eutelsat satellite and compressed using V-Nova's UHD P.Link product. Consequently, UHD feeds were contributed alongside HD without delays.

Distribution

V-Nova PERSEUS can also provide UHD distribution of premium sports over satellite at breakthrough data rates, enabling operators to offer cost-effective premium live sports services in UHD.

During a demonstration with satellite operator Thaicom, V-Nova PERSEUS delivered UHDp50 footage of football content within the tight constraints of satellite bandwidth using off-the-shelf hardware.

www.v-nova.com



WHEATSTONE CORP.

AirAura X4 Digital Spectral Processor

New Dual Touchscreen Top-of-the-Line Multi-Band Audio Processor

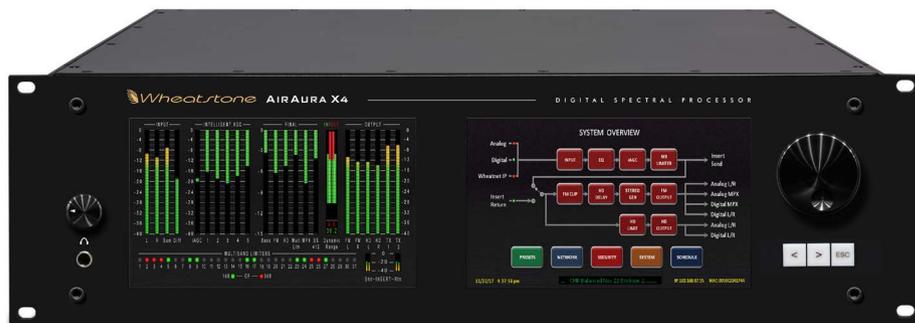
Wheatstone's new FM and HD audio processor has been designed from the ground up based on several technical breakthroughs, including a new interacting system where all stages of processing are aware of each other. In traditional designs different processing stages are created to complement each other, but not all information between stages is shared. The AirAura X4 breaks down that wall and allows the processor to share information between *all* stages. "Our SST and original iAGC algorithms were a doorway into this, where the processor would share information in the front end about who was doing what. Now the iAGC, limiters *and* clipper all share this information, and changes can be made automatically, in real time, in ways never envisioned before," commented Jeff Keith, product development engineer for Wheatstone processing.

Like its AirAura X3 predecessor, the X4 includes 31-band limiting, but utilizes it working directly with the X4 clipper, providing an audio blueprint for how the clipper should behave. Incorporating the limiter with the clipper is a major step forward for transparent loudness. With both front- and back-end processing working in concert, the need to make loudness compromises is significantly diminished.

The AirAura X4 includes a redesigned bass proces-

sor, enhanced controls in the iAGC, and full RDS capabilities. It includes Wheatstone's HD/FM audio alignment, which works either with third-party modulation monitors or by itself through the FM/HD tuner built into the unit. AES insert points let customers insert ratings encoders into the processing system instead of before it. This allows the X4's iAGC to operate ahead of the encoder instead of through an outboard leveler.

Popular features of previous models have been incorporated as well, including improved multipath mitigation, redesigned composite processing with selectable lookahead limiting/clipping, baseband192 composite AES connectivity, and a full set of analysis displays.



wheatstone.com/audio-processing

WOHLER TECHNOLOGIES

iAM-VIDEO-2-MPEG Monitoring Tool

Decodes and Monitors MPEG 2 Streams Carrying MPEG-2 or MPEG-4/H.264

IAM-VIDEO-2-MPEG provides a unique MPEG monitoring tool offering features and capabilities traditionally only available by combining multiple MPEG and SDI decoder units, audio monitors and video monitors, which in combination take up considerably more space and cost many times as much. It saves time by allowing direct access to available streams in both SPTS and MPTS, displaying video, audio and associated MPEG metadata, allowing operators to immediately identify potential issues from within the equipment rack.

The iAM-VIDEO-2-MPEG decodes and monitors MPEG 2 transport streams carrying MPEG-2 or MPEG-4/H.264 encoded video plus all associated data tables for complete confidence. The iAM-VIDEO-2-MPEG is an ideal solution for any application that requires a compact unit for monitoring an evolving range of professional signals, as it's designed for easy operation and high-quality, intuitive monitoring of multiple signals. Equipped with a variety of metering options, it also supports analog

audio, AES3 and MADI inputs, with options for IP formats including SMPTE 2022-6,

AoIP formats _ Dante™, Ravenna™ and AES67, 3G/HD/SD-SDI, as well as a growing range of additional I/O options via a small pluggable (SFP) interface.

With both front-mounting speakers and sub-woofers, the iAM-VIDEO has powerful sound output and audio reproduction that adheres to Wohler's own strict specifications. The iAM-VIDEO-2-MPEG's high-quality touchscreen panel provides elegant control with simple-to-navigate menus and configuration. The physical front-panel controls provide access to main and auxiliary volume controls, balance control and a front-mounting USB port to easily access software updates to support new and emerging technologies.

The iAM-VIDEO-2-MPEG offers a browser-based GUI to complement Wohler's traditional front-panel monitoring interfaces for remote control, as well as future options for remote monitoring and logging. In addition, the units can be controlled by third-party devices via an application programming interface (API). The use of SFPs enables simple, in situ adaptation of interfaces and a wide selection of signal I/O. This, in combination with other software-defined features, creates a smooth upgrade path to new and emerging protocols. The iAM Series line is designed to ensure users have the best available, and most relevant, features through regular updates and licensable options.



XYTECH

MediaPulse Sky Web User Interface

A New Web and Mobile Platform for MediaPulse

MediaPulse Sky is the new web interface for MediaPulse. Not just a portal, it is a complete user experience reimagined for the web and mobile devices. The interface is completely configurable through Xytech's Layout Editor and delivers a completely custom web interface in a totally productized solution. Each screen and every user can have separate Client, Web and Mobile layouts.

Dashboards with Panels, Tabs and Graphics all work together to give the end-user a clean, easy and robust user experience. In addition to the full feature footprint of MediaPulse, Sky delivers real-time reporting visualized through charts and graphs to web and mobile devices.

HTML5 is the interface technology, but Sky takes full advantage of the MediaPulse API and development stack. Additionally, the data payloads between the user interface

and the web server are automatically trimmed and optimized through MediaPulse Flex List technology. This allows MediaPulse to run over cellular networks so the full power of MediaPulse is now available on any device anywhere the internet is available.

Users can actualize orders, confirm crewing assignments, provision video feeds, schedule sessions, review assignments wherever they may be with whatever device they choose.



ZLENSE (ZINEMATH)

zKey 3D Keying System

Create Your Alpha Channel Without Chroma Key

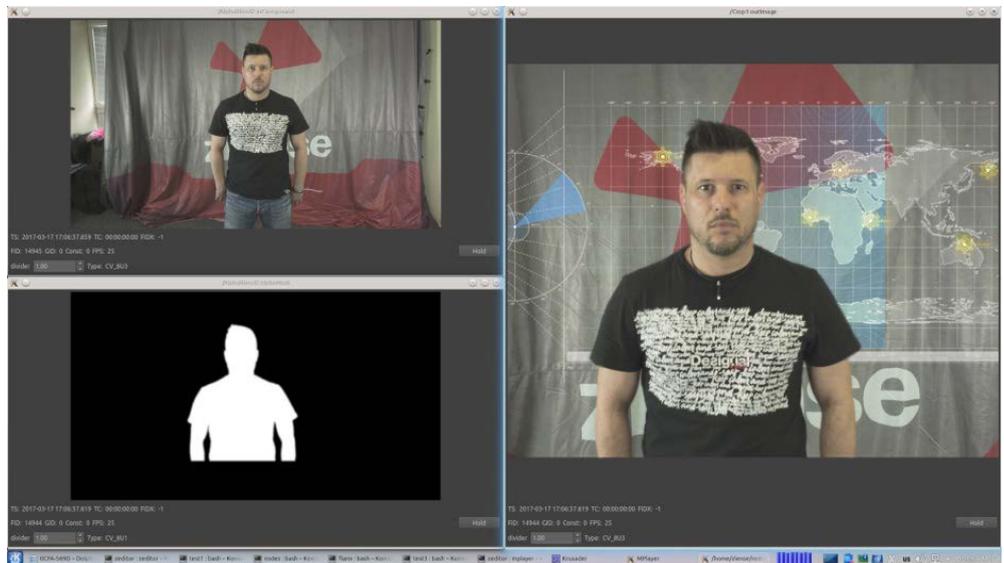
Zlense's new three-dimensional zKey (3D) keying system uses the distance from the camera to determine the silhouette of the talent in real time, allowing the creation of the alpha channel or image mask without chroma or luma keying, and no special lighting is required. With this approach, new options are possible for both creative executions and for operational and business tasks.

The zKey solution uses the depth image along the same optical axis as the video image to determine the silhouette of the talent. The edges of this silhouette are used to create an alpha channel of the foreground talent in real time.

The turnkey solution provides everything you need, out-of-the-box, to use your existing studio camera in tandem with our range-finding camera. Together, the two cameras will transmit full HD video and the associated depth data to our 3D keying appliance that outputs the alpha channel and mask with a delay of only four frames. The system also allows for panning and tilting on a tripod-mounted camera. With using this solution

there isn't a concern about limiting foreground colors; shadows being casted by talent onto the green screen; green light being reflected from the background onto the talent and vice versa.

The zKey (3D) keying system provides great support for natural illumination.



zlense.com

ZOO DIGITAL

ZOOdubs Dubbing Platform

The Entertainment Industry's First Cloud-Based Dubbing Platform

Digital distribution into almost every country is creating unprecedented demand for premium localization services and dubbed soundtracks are essential to ensure commercial success in some countries.

However, there's a growing challenge regarding timely production of high-quality dubbed soundtracks. Entertainment content publishers centralize work around a small number of specialist dubbing studios, each using a limited pool of local voice artists and difficulties in scaling up capacity to accommodate more languages causes a bottleneck. In the traditional dubbing workflow, recording sessions require specialist studio equipment. With the need to assemble voice artists, recording engineers and dubbing directors in the same location, there are difficulties in diarizing, especially with sought-after star talent, incurring time and cost for travel. Dubbing studios typically draw on a favored network of contacts that reside locally, meaning audiences hear the same voice artists.

The dubbing process is error prone with lines of audio missed during recording sessions, leading to delays and additional costs to remedy. Further, there has been a lack of industry-standard workflows for coordinating multiple dubbing studios and a lack of systems to consistently support the dubbing process.

ZOOdubs radically transforms the way dubbing is performed, recorded and managed. For the first time, ZOO's own proprietary cloud technology systematizes and centralizes multiple functions, encapsulating the entire dubbing process from script localization and adaptation to casting, auditioning, recording, editing and mixing without requiring individual participants. This reduces errors and makes it simpler to manage the workflow.

ZOOdubs provides a growing database of voice actors, enabling efficient scheduling and communication with artists and directorial staff and cost-effective access to a wider pool of voice talent.

The system enables supervised recordings to be created remotely over the internet using non-specialist recording spaces, vocal booths and home recording setups.

Casting directors are able to

search, review and cast on the move using an iPad. ZOOdubs assists in identifying key voice characteristics of characters and sources the best possible match from the integrated voice artist database. Casting auditions are recorded in ZOOdubs, giving creative directors the ability to compare and navigate between multiple audio sessions to select the right artist for the role.

Once artists have been selected, creative and dubbing directors are

ZOOdubs

able to work remotely in real time with any number of voice artists anywhere in the world for dubbing sessions and script reviewing.

Content producers are no longer restricted by a limited supply of expensive dubbing studios. Voice artists record auditions live in the cloud using approved microphones, preamplifiers and sound treatment, with a minimal requirement for on-site staff, equipment and software. ZOO has undertaken trials of specified home setups for which the quality was comparable to professional dubbing studios.

With greater visibility of the dubbing process, content owners are able to track projects as they move through key milestones such as reviewing, casting and approving materials. This instant, online collaboration makes it far easier to coordinate dubbing reference materials including proxy, adapted scripts, which are normally sent to dubbing houses along with the multitude of associated Word documents, spreadsheets and emails.

Stringent cloud-based security protocols ensure that assets are stored securely, reducing the risk of leaks. Video assets are watermarked while being accessible to authorized collaborators in the cloud, eliminating the risks associated with downloading.

ZOOdubs cloud technology simplifies the dubbing process, providing greater productivity, improved quality and shorter time to market for global distribution of premium TV and movie content.



www.zoodigital.com/services/production-services/dubbing

ADOBE

Creative Cloud Boosts World-Class Offerings

Creative Cloud Lets You Create, Collaborate and Streamline Your Video Work

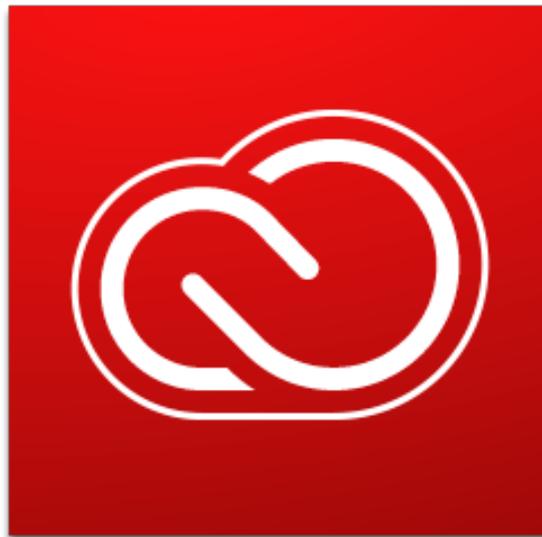
As Adobe celebrates 25 years since Premiere Pro was first introduced to the video industry, the company announced the availability of a wide array of new capabilities and performance improvements across platforms in the world's best video and audio apps. Building on 25 years of proven innovation and reliability, Adobe is introducing new features for graphics and titling, polishing audio, refining color, sharing assets that will enhance both performance and efficiency.

Technology advancements and exploding consumer demand for impactful and personalized content require video producers to create, deliver and monetize their video assets faster than ever before. From the largest studio to next generation YouTubers, a scalable, end-to-end solution is required to create, collaborate and streamline video workflows with robust analytics and advertising tools to optimize content and drive more value.

The Power to Create — Bring your creative vision to life faster than ever with a range of innovative new features, like the Essential Graphics and Essential Sound panels, which bring the capabilities of Adobe Premiere Pro for an even more efficient editing workflow. Plus, get new post-production features that deliver the results you want while giving you the performance you require.

Seamless Collaboration — Simplifying collaboration dramatically boosts productivity for creative teams and enterprise production environments.

Team Projects, built right into Premiere Pro and After Effects makes collaboration as easy as editing on your own, including support for Dynamic Link. Just open a shared project and work the way you're used to work-



ing—alongside your collaborators, wherever they are based.

Streamlined Workflows — Work more efficiently thanks to enhanced integration between Adobe Premiere Pro and After Effects or Audition, broad native and proxy format support, including VR, HDR and UHD media. Built-in access to Adobe Stock lets you sell content, or purchase assets without leaving your production tools.

The latest updates to Creative Cloud video tools include:

- Motion Graphics Templates now bring the power of After Effects to Premiere Pro through easy to use templates, allowing creators to add beautiful titles, animations and lower thirds to their videos and create custom motion graphics templates, which can be shared via Creative Cloud Libraries.
- Essential Sound Panel in Premiere Pro lets users make audio mixes and sound improvements that in the past would have required a dedicated session by an audio engineer.
- Camera shake deblur in After Effects rescues unusable footage by reducing motion blur that often occurs with camera shake.
- Character Animator (beta) continues to invent the future of live animation with new technology that now animates multiple puppets created in Photoshop or Illustrator, and embraces full body animation with new walk cycles.
- Team Projects (Beta) allows Creative Cloud teams or enterprise members to have a secure cloud-first collaborative workflow with new support for Dynamic Link and Adobe Media Encoder to streamline collaboration.
- Hundreds of third-party integrations including Apple touch bar support for MacBook Pro and new Microsoft Surface Dial functionality in Premiere Pro with shuttle control in the timeline as well as changing hot float and text values.



www.adobe.com/creativecloud.html

ASPERA, AN IBM CO.

Aspera Files SaaS

A Multi-Cloud SaaS Platform for Media Collaboration, Transfer and Streaming

Aspera Files is a breakthrough SaaS platform for high-speed media collaboration including large file transfer, sharing and now live streaming from any public cloud or on-premise storage. Fully managed by Aspera, Files allows organizations to instantly onboard and start sharing media from any environment via a “single pane.”

Files uses Aspera’s FASP® technology to overcome the fundamental size, speed and distance limitations of traditional transfer and streaming technologies. FASP provides distance independent transfer speed (regardless of network round-trip delay and packet loss), and predictable live streaming over commodity internet WANs.

Transfers are direct with all public and private cloud object storage, and have no content size limits.

As a result, Files offers breakthrough capabilities for distributed media management:

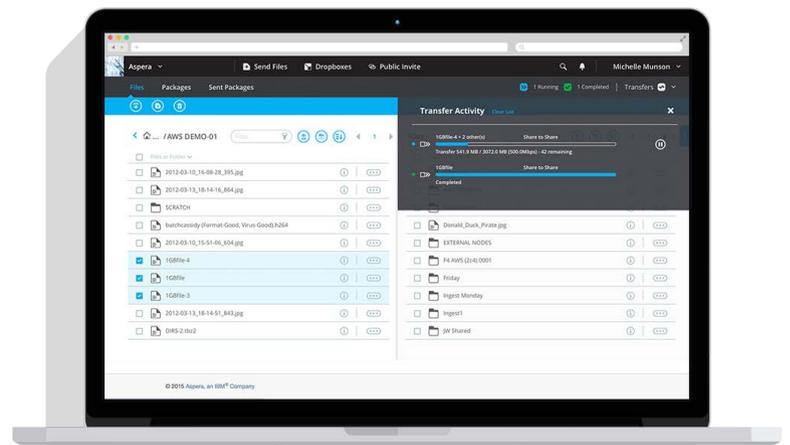
- No Size Limits — Move any size or number of files and data sets
- Maximum Speed — Send reliably at maximum available bandwidth over global WANs and ingest live video without glitches or delays
- Support for Any Storage — Open to any infrastructure combination of on-premises and in the cloud for direct access and high-speed transfer
- Powerful Security — Comprehensive built-in security including fine-grained user access control, collaboration settings and encryption on the wire and at rest
- Automatically Scales — Built-in elastic scaling supports variable transfer throughput and storage
- Instantly Available — New organizations onboard instantly with private, branded project-based sharing

First launched in 2016, Files now introduces dramatic expansion through a new Streaming Service option, and the following new capabilities:

- Files Streaming Service allows Aspera nodes to ingest live video streams through Files and distribute streams to browser clients via a lightweight plugin. Based on the FASPstream technology, which transmits live broadcast-quality video over internet without glitches, the new architecture can transport any HTTP/TCP or UDP video stream between media sources and clients with high quality and without modifying the media workflow.
- New Aspera Drive and Mobile Apps for iOS/Android extend collaboration possibilities for desktop and mobile users. Aspera Drive provides in-desktop Files access for remote transfer, sync and package exchange on Windows and OS X. New Check-in/Check-out options allow users to download a local copy of files to make changes exclu-

sively and check-in to replace the master version. New remote Share-to-Share transfers allow users to move content between global storage in the desktop, and a new OS X finder mount seamlessly opens remote files and saves local files for check-in to the infrastructure.

- New Files Express Mode is an ultra simple interface for sending and requesting large files and folders, activated with a simple toggle from full Files mode. Users can drag and drop to send packages with per-package expiration and encryption, and invite others to send to them with one-click personalized invitations. A convenient retractable side bar allows users to preview incoming packages and download contents, forward previously sent packages, and review, modify and resend invitations.



- Seamless integration with the new Aspera Transfer Service, a hosted, multi-cloud transfer service that enables secure high-speed transfer of large files and data sets across cloud infrastructure. Customers can instantly add ATS subscriptions directly to their Files organization to securely share their cloud storage on AWS, IBM Cloud, Azure and Google Cloud (coming soon).
- New Subscription options with pure pay-as-you-go and volume commitment options ideal for the smallest startup or the largest enterprise.
- Self-service Trial and Purchase available directly from the Aspera Online Store.
- Many features enhancements (more than 30) around Collaboration, Security, Storage and Transfer Management, File Management and User and Workspace Management.

www.asperasoft.com

AVID

Avid Artist | DNxIQ

Video Interface Offers Flexible 4K Monitoring

With the influx of new technologies, media formats and creative tools, it can be a challenge — and expensive — for video professionals to equip their studios with the gear they need to support today's complex and diverse workflows. As part of Avid's commitment to offering the most comprehensive set of tools and workflow solutions to create, distribute and optimize media, Avid Artist | DNxIQ offers video profes-

sionals extensive format support enabling broadcast and post-production facilities to easily and quickly respond to rapidly changing content demands and deliver to a broader range of channels and ever-changing devices.

As the successor to Avid Artist | DNxIO, Avid Artist | DNxIQ video interface gives video professionals flexibility in today's deadline-inflexible world, providing support for every type of connection, format and

workflow professional facilities need. With the Avid Artist | DNxIQ video interface, users can ingest, capture, monitor and output SD, HD, 2K, UHD and 4K media quickly without compromising on quality. The integrated front-panel HD display allows editors to monitor media that is being ingested into and outputted from the system, even when the software is not running.

Built on the Avid MediaCentral® Platform, Avid Artist | DNxIQ is compatible with any Avid Artist Suite solution, such as Media Composer and supports numerous third-party creative tools, including Blackmagic Resolve, Apple Final Cut Pro X, Adobe Premiere Pro and more. The Avid Artist | DNxIQ's Universal Mastering features combine seamlessly with the Media Composer | Symphony Option, providing simple, real-time raster and frame-rate conversion on output and playback over SDI, HDMI and analog connections. This makes for easy access to connect cameras, video decks,

audio interfaces, routers, switchers, mics, monitor displays, speakers and other devices into workflows.

As well as supporting all major NLEs, Avid Artist | DNxIQ features Thunderbolt 3 and PCIe for universal mastering, giving users greater speed, pixels and playout options. Thunderbolt 3 and PCIe provides the bandwidth needed to handle high-resolution video formats, which coincides with Media Composer | Symphony Option.



www.avid.com/en/products/avid-artist-dnxio

BB&S LIGHTING

Pipeline 2' 2-Bank Remote Phosphor Light

Compact Remote Phosphor LED Lights Ideal for Small Studios

BB&S' new Pipeline 2' 2-Banks remote phosphor LED lights are so compact and lightweight with such powerful and controllable output that they are being grabbed up for use by broadcast studios, remote production and cine work alike — since deliveries began this season. Small broadcast studio space saver When studio space is small, with low ceilings that often don't come with a large power drop, there's a lighting challenge. They require small form-factor lights that provide high light output, low power draw, with high TLCI 98 accurate color quality. BB&S rides to the rescue with the Pipeline 2' 2-Bank remote phosphor fixtures, available in 3200°K, 4300°K and 5600°K versions.

The compactly-designed 2' 2-Bank fixture weighs 3 pounds and is 24 inches L x 4 inches high x 1.5 inches deep. It comes with a removable honeycomb grid and Diffuser. In studio it can be mounted flush against a wall or ceiling, or hung with multiple optional hardware accessories. In the field it travels lightly as a single unit, in a small case. Better Color over time

Where traditional LED fixtures may offer a partial solution for the studio, they are limited in providing highly accurate color rendering. And while their phosphor layer is applied directly onto the heat generating LEDs (that degrade over time), BB&S uses remote phosphor technology, which separates the LEDs from the color generating phosphor coating, enabling more vivid color generation, TLCI as high as 98, and less color degradation over the long term.

2' 2-Banks Rugged, High TLCI and Infinitely Dimmable BB&S' Pipeline fixtures, are ruggedly made in a 1-inch cylindrical form that emits light around 180 degrees. They provide upwards of 98 TLCI color accuracy, and are infinitely dimmable with no color shift or flicker.

With an aluminum back channel, Pipeline

fixtures are practically indestructible. Plus they are smoothly dimmable throughout the range. Low Power Draw, High Light Output Each 2' 2-Bank fixture draws a paltry 40W at the 100% end of its dimming range, outputting a maximum of 4000 lumens. This allows up to a dozen of the 2-Banks to be plugged into the same 15W wall outlet. For field production assignments, commonly available professional 14.4V camera battery packs can also be utilized, with the optional driver dimmer pack, to eliminate the need for AC power outlets. Control Options The 2' 2-Banks are part of BB&S' Raw series of lights, which



means they do not come with their own driver dimmers. A short cable with a 3-pin XLR connector on the 2' 2-Bank allows a single optional controller or BB&S' convenient 48V 4-way Controller with DMX to control up to four of the banks. This 48V solution provides smooth dimming all the way to zero. And there is no flicker at any framerate. Optional extension cables 8', 16' and 24' can be used, with no power loss. (Alternatively, users can supply their own LED driver/dimmers with optional DMX packages.) From Small Broadcast Studios to Run and Gun With its small footprint, low power draw, high light output at 98 TLCI or better, and full dimming, the BB&S 2' 2-Bank remote phosphor lighting instruments are made to order for small studios and remote broadcast and ENG.



www.bbslighting.com/products/pipeline-2-2-bank-remote-phosphor-led

BENQ AMERICA CORP.

PV270 Photo and Video Editing Monitor

Offers Uncompromising Color Performance and Powerful Calibration Tools

The new 27-inch BenQ PV270 monitor is built to meet the demanding needs of photographers that edit both stills and video. It offers uncompromising color performance and powerful calibration tools that make it the ideal monitor for professionals that require reliable color throughout their workflow. The BenQ PV270 is the epitome of “still meeting motion,” giving professional photographers the best of both worlds.

Technicolor® Color-certified, it covers 99 percent Adobe® RGB, 100 percent Rec. 709, and 96 percent DCI-P3 color gamut with advanced In-Plane Switch (IPS) technology, which improves poor viewing angles and color reproduction associated with TN technology. The Adobe RGB coverage encompasses most of the colors producible for photography, whereas the Rec. 709 coverage and the DCI-P3 color gamut is crucial for video post-production work. Thus, the PV270 is ideal for professional photographers that currently edit video, or for those thinking about moving into video.



It also includes hardware calibration support via the Palette Master Element calibration software to adjust the monitor's color gamut, white point, color temperature, and luminance.

The display features brightness uniformity, which offers a more authentic and consistent viewing experience. The included monitor hood prevents any reflections or glare that can cause uniformity issues critical in this line of work. The 2560 x 1440 (QHD) resolution delivers the crisp picture quality expected for close reviews and detailed editing, and the spacious 27-inch widescreen view provides greater comfort and productivity.

With a 14-bit 3D Look Up Table (LUT), professionals can display the most accurate color mixture. It also improves the RGB color blending accuracy, resulting in impeccable color and grey tone reproduction. As a result, video and photography professionals have a desktop monitor with precise color correction that meets the strictest standards imposed on Hollywood for consistent, accurate colors.

www.benq.us/product/monitor/pv270

BLACKMAGIC DESIGN

DaVinci Resolve 14 Post-Production Suite

Revolutionary Tools for Editing, Color Correction and Audio Post Production

A revolution in post production, DaVinci Resolve 14 is three high-end applications in one, with one click to switch between editing, color and audio. While DaVinci Resolve 14 is available for free, DaVinci Resolve 14 Studio has been reduced in price from \$995 to \$299.

DaVinci Resolve 14's new high performance playback engine is up to 10 times faster with extensive CPU and GPU optimizations, better threading and GPU pipelining, lower latency, faster UI refresh rates, support for Apple Metal and more. Scrubbing and playback are instantaneous, and new acceleration for processor-intensive formats, such as H.264, make it possible to edit 4K images on a laptop.

Fairlight audio is now fully built into DaVinci Resolve 14, providing professional audio tools for recording, editing and sweetening, professional bussing, mixing and routing, and multi-format mastering to 3D audio formats such as 5.1, 7.1, Dolby and even 22.2. The low latency audio engine works with 192kHz 96-bit audio, delivering up to 1,000 tracks with real-time EQ, dynamics processing and plug-ins on every track when used with the Fairlight Audio Accelerator. Without the accelerator, most modern computers can still process more than 60 tracks in real time.

Fairlight audio can record up to 96 channels, simultaneously playing back up to 150 audio channels, while mixing it all in real-time. It features a full multi-track timeline for subframe editing of audio, down to the sample level. The mixer creates sophisticated sequences and has several main, sub and aux buses for mastering and delivering to multiple formats at the same time. Every channel on the mixer features real-time six band parametric EQ and expander/gate, compressor and limiter dynamics. Clip time warping can stretch or compress audio without shifting pitch.

Every single parameter can be automated using the automation modes.

Multi-channel recording tools allow for recording while monitoring video and multiple channels of dialogue and sound effects. Monitoring can handle buses up to 24 channels wide with customizable fold-up and fold-down for crossing between formats. Advanced bussing and mixing architecture allows multi-language and multi-format delivery to be handled simultaneously from the same project.

New collaboration tools support simultaneous editing, color correction and audio post. Safely work on a specific part of a project without overwriting using new bin, clip and timeline locking. A built-in secure chat client lets team members talk to each other without the need for an external internet connection.

New timeline comparison makes it easy to see differences and merge changes between two

timelines by viewing a side-by-side comparison of every single change made between users. No need to buy expensive or proprietary storage and servers to work collaboratively as DaVinci Resolve 14 works with the storage customers already have.

New multi-user features eliminate the need for importing, exporting, translating and conforming projects. No more waiting for a locked edit before starting color and audio work; switching between editing, color and audio is one click away; and picture editors, colorists and sound editors can all work in parallel.

New editing enhancements include slip and slide trim commands, saving interface layout presets, viewing multiple bins at once and opening multiple bin windows, marker overlays, audio only and video only edit tools, tracking colors and subframe audio editing.

New color enhancements include numerous Resolve FX filters (remove dust, fix dead pixels, warp images), face enhancement tool (automatically recognizes and tracks facial features without manually selecting or rotoscoping any part of the image), stabilization, match move and other image processing tools.



www.blackmagicdesign.com/media/release/20170424-01

BORIS FX / IMAGINEER SYSTEMS

Mocha VR: The 360°/VR Post Toolkit

Academy Award-Winning Tracking & Effects Tool, Now Optimized for 360° Video

Mocha VR is a groundbreaking new software plug-in bringing advanced visual effects and post-production workflows to 360° video content creators. Mocha VR is designed to solve difficult 360° video finishing tasks such as stabilizing moving camera footage and auto-removing the unwanted elements from a scene such as camera rigs, shadows and crew.

Built on Mocha's famous Academy Award-winning planar tracking engine, Mocha VR brings native 360° optimized tracking, masking, object removal and stabilization tools to industry standard editing and effects hosts such as: Adobe Premiere Pro & After Effects, Avid Media Composer, The Foundry's Nuke, Blackmagic Design Resolve, Fusion and more.

Mocha VR currently fulfills a valuable and unique niche as the only available 360° video tool available for Avid Media Composer, bringing an advanced cross-host solution that enables Avid editors to work on 360°/VR content.

Mocha VR Features:

360° Planar Tracking — Imagineer's award-winning planar tracking solution now supports equirectangular footage delivering the world's most robust 360° tracking solution for post-production.

Optimized workspace and toolset works simultaneously in rectilinear and lat/long views bringing 360° capability to a variety of host applications. Editors and artists can easily track, roto, create effects and insert graphics without worrying about equirectangular seams or distorted pixels.

360° Masking Tools — Unlimited X-Spline tools for articulate shape creation and masking, saves hours of time versus traditional keyframing techniques. Roto-masks can be rendered back to host or exported to most editing and compositing systems.

360° Object Removal — Mocha's famous Remove Module now works on 360° video by analyzing temporal frames and "automatically removing" unwanted camera rigs, shadows, crew members and more for massive time-savings.

Horizon Stabilization — Designed to reduce unstable motion, the new Reorient Module can drastically improve nausea-inducing VR experiences by smoothing or stabilizing shaky, handheld and drone captured footage. Driven by robust planar tracking, a user can even track and stabilize difficult and "out of focus" footage.

Lens Distort Workflow for 360° Compositing — Plug-in based lens correction workflow converts between lat/long and rectilinear for a simple workflow to add titles, graphics, patches and non-360 enabled filters to your 360 project.



Plug-in & Standalone Workflows — Running as a plug-in inside industry standard editing and effects applications Adobe Premiere Pro CC, After Effects CC, Avid Media Composer and Nuke provides an immediate and accessible workflow for 360/VR post tasks. Render finished shots to your timeline or export tracking and roto data in a variety of formats for flexibility and project sharing.



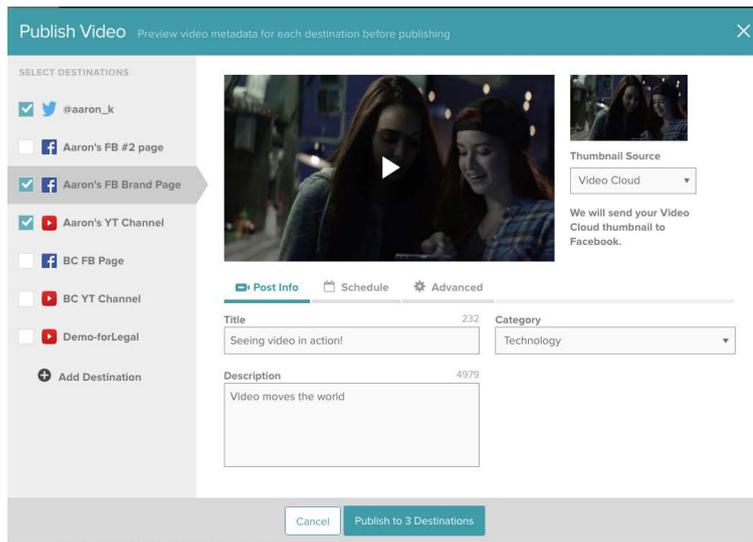
borisfx.com/products/mocha-vr

BRIGHTCOVE

Brightcove Social, Video Syndication

Streamlined Video Publishing and Analytics Across Social Platforms

Media companies have embraced the publishing of their video content on social platforms to reach the massive audiences that congregate there but have suffered from workflow inefficiencies. Brightcove Social is the first solution that streamlines social video publishing and enables organizations to manage online video presence across social networks from a single interface. Using Brightcove Social, media organizations can clip content and automate publishing to Facebook, Twitter, and YouTube.



The product is easy to use, seamlessly integrated into Brightcove's OVP, Video Cloud and aggregates social video engagement metrics across all properties where the video is published, including views, likes and shares.

Today, media brands and publishers dedicate valuable time and resources to push an existing video to social networks. To help alleviate time and resource constraints, Brightcove Social delivers features that allow customers to publish videos to social channels more easily than ever.

- **Analytics:** View all video analytics in one place and get insight into video performance. Customers no longer have to navigate multiple tools to track video performance but can now go to one dashboard to

see video views, likes, comments and retweets.

- **Publish Natively:** Drive more views and get more impressions by using Brightcove Social which syndicates directly to social sites so videos play in their native players. This allows for videos to get the same visibility as those uploaded directly to social channels.
- **Streamlined Workflows:** Allows social media managers to post videos to different social channels from one place without multiple uploads or concern for file formats.
- **Video Editing:** Quickly and easily customize video for each social network. Trim videos to shorter clips and add bumpers at the beginning or ending of videos for more opportunities to increase brand awareness.
- **Scheduling:** Schedule social posts in advance to save time ahead of big events and campaigns.
- **Repurpose Content:** Upload videos once, make custom edits and publish to multiple channels, all from one intuitive interface. Easily maintain and manage all saved edits on one platform.
- **Organization:** Quickly categorize, sort, and access videos through convenient features such as folders, batch editing, and playlists.
- **Permissions:** Allows for multiple users to post social video updates while preserving the security of banded social channels.

Brightcove Social is a key feature built into Brightcove Video Cloud, which is the backbone of the solution with industry-leading ingestion, transcoding, metadata management and the world's highest performance video player and SDKs.

Rogers Media began using Brightcove Social to manage the social presence of three of its main brands, Sportsnet, Chatelaine and City, and is currently in the middle of its roll out plan to about 70 of its other brands over time.

Haley Overland, a frequent user of Brightcove Social at Rogers Media said "I am very happy with Brightcove Social and the streamlined workflows it provides me. We were already using Brightcove Video Cloud so the addition of Brightcove Social made storing and sharing videos on social that much easier." Before, Rogers Media was manually uploading posts to each social channel which took a chunk of time out of Haley's day, now she can focus on other tasks that are more important, knowing that Brightcove Social will handling the posting to social channels.

CARL ZEISS SBE LLC

CP.3 XD Compact Zoom With eXtended Data

High-Performance Cine Lenses That Keep Pace With Technology

The ZEISS CP.3 XD lenses offer the perfect combination of high image quality and reliable usability. They exhibit the clean, crisp characteristics ZEISS is known for, together with an interchangeable mount system and full-frame coverage.

The ZEISS CP.3 XD features innovative and ground-breaking lens data technology to speed-up and simplify the workflow on set and in post-production. ZEISS eXtended Data unifies two data sets: key lens data based on the open /i Technology standard and supported by a wide range of cameras and accessories, plus ZEISS specific lens data that contains precise lens characteristics. With the ZEISS CP.3 XD lenses, even small productions on a limited budget gain access to the advanced techniques common in state-of-the-art, big budget films, commercials and television shows.



www.zeiss.com/cine

EMOTIMO INC.

eMotimo spectrum ST4_v2

Full-Featured, Four-Axis Motion Control Refined for Video Professionals

eMotimo's spectrum ST4_v2 is designed to be the most portable, powerful, and intuitive tool for cinematic camera movement. V2 adds new capabilities, refines the durability, and increases the rated payload to 15lbs. Pairing to new accessories like the precise eMotimo Fz motor push production capability to new levels.

Functionally, spectrum ST4_v2 supports live video, time-lapse, looping interview shots, repeatable video moves for VFX, stop-frame animation, and gigapixel panoramas. Control all four axes simultaneously from the included wireless gaming remote, or use the joystick on the side to set up programmed moves. The spectrum ST4_v2 drives sliders, focus motors, carts, turntables, and other accessories offered by eMotimo or third parties.

Physically, spectrum ST4_v2 is faster, quieter and requires fewer wires and connections than competitors. CNC machined out of solid aluminum, it is designed for the rigors of any production environment — from studio to mountaintop. Its surfaces are media-blasted and hard black anodized to create a matte finish that is durable and reduces unwanted

reflections. The screen is an efficient, sunlight-readable OLED.

A large focus of the design and development was on the efficiency and simplicity of the interface. The spectrum ST4_v2 is meant for quick run-and-gun shots that take seconds to set up, as well as programming complex multiple keyframed shots that take just a couple minutes to configure and run. All features are available without tethering to a computer or tablet. Studio shooters who want to push the limits will appreciate our open API that allows the ST4_v2 to connect with various software solutions (i.e. DragonFrame). Highlights:

- *Wireless four-axis remote control:* For a live shooter, the included gaming remote and its intuitive joysticks and triggers puts them in control of all 4-axes (pan, tilt, slide and focus).
- Apps and desktop control are clunky once you feel the responsiveness and accuracy of the spectrum ST4_v2.
- *Selectable motor profiles:* The spectrum ST4_v2 is all about feel. Unlike most other motion control on the market, it has outstanding live control through the remote. The spectrum ST4_v2 is armed with 10 different motor move presets — from turbo mode to quiet interview mode and everything in between.
- *GoTo frames:* Set up important target positions that can be called up with a button press from the remote. Hit your target on time, every time, with the ramping and damping feel you select. Assign up to four GoTo frames to set up quick video moves and traverse between these points live.
- *Interview mode:* Set up a simple A-B continuous move to serve as your robotic second camera, or push it further by adding a focus module to keep your subject sharp during pushes and pulls.
- *Record live and play it back:* Record/Playback mode allows you to record a move live and play or repeat that move over and over. You can also program spectrum ST4_v2 to play the move back at different FPS or break it up into a shoot-move-shoot time-lapse.
- *For the time-lapse artist:* In addition to the built-in intervalometer and the i/o port enabling integration to any exposure ramping solution, the spectrum ST4_v2 has complex keyframing with up to 5 programmable keyframes — no computer required. The spectrum ST4_v2 is exceptionally power efficient and can handle long duration shoots with any 12-24 volt source.



emotimo.com

FLANDERS SCIENTIFIC INC.

DM170 Color Critical Production Monitor

Advanced Features Minimize Additional On-Set Equipment Needs

The durable, lightweight, and power-efficient Flanders Scientific DM170 has been purpose built for production applications where a color critical compact monitor is required.

The DM170 utilizes a native HD 10 bit LCD panel with a wide color gamut covering 100 percent of the DCI P3 color space and features an outstanding real-world contrast ratio of 1500:1. The DM170 features 12 bit 3 Gbps SDI inputs and is equipped with Flanders Scientific's advanced third generation color fidelity engine which supports both 3D calibration and 3D DIT/Look LUTs.

At 16.5 inches the DM170 is the most compact monitor in Flanders Scientific's flagship DM series and is equipped with the same advanced features and capabilities. Industry leading fast mode processing, Real-Time Scopes with HDR waveform, HDR preview modes, a strong all-metal chassis, and direct integration with today's most powerful color management tools make the DM170 a production environment workhorse for applications where color really matters.

The DM170 features 18 different scopes and meters, an adjustable exposure check tool, advanced pixel level measurement capabilities, live side-by-side monitoring, the ability to upload and store up to 16 3D DIT LUTs, a video data analyzer, loudness meter, and CIE scope. Additional capabilities include anamorphic de-squeeze functionality for 1.3x, 2.0x, 1.3xMag and 2.0xMag de-squeeze ratios, a variety of zoom modes, pixel mapping for non-native HD signals, markers, timecode, focus assist and log monitoring modes.

The DM170 can also utilize Flanders Scientific's IP Remote Utility and ScopeStream applications for Windows or Macintosh computers.

The IP Remote Utility allows for IP remote control of the connected monitor as well as full resolution frame grab and recall.

With ScopeStream, the DM170 transmits real-time waveform or vector scope data over IP so that they can be viewed on a connected computer leaving the reference monitor's screen unimpeded.



The DM170 also offers direct integration with on-set color management solutions like Pomfort's LiveGradePro, Filmlight's Prelight, Firefly Cinema's Fireplay and QTAKE's Grade module allowing for on-set color grading without the need for a standalone LUT box.

The monitor features dedicated second screen outputs for distributing manipulated images to downstream equipment, a true Zero-Delay processing mode, and signal cross-conversion making the DM170 the most state of the art 17-inch production monitor in the industry.



flandersscientific.com/DM170

FLANDERS SCIENTIFIC INC.

DM240 Color Critical Production Monitor

Advanced Features Minimize Additional On-Set Equipment Requirements

The DM240 from Flanders Scientific is the latest in a long line of highly regarded color critical production monitors. The DM240 is durable, lightweight and power-efficient with enough screen real estate to make it equally at home in the color suite and on-set. The DM240 is equipped with the same advanced features and capabilities as the flagship DM250, but utilizes a native HD 10bit LCD panel with a wide color gamut covering 100 percent of the DCI P3 color space and features an outstanding real-world contrast ratio of 1500:1. The DM240 features 12bit 3Gbps SDI inputs and is equipped with Flanders Scientific's advanced third generation color fidelity engine which supports both 3D calibration and 3D DIT/Look LUTs.

Industry-leading, fast mode processing, Real-Time Scopes with HDR waveform, HDR preview modes, a strong all-metal chassis and direct integration with today's most powerful color management tools make the DM240 a production environment workhorse for applications where color really matters.

The DM240 features 18 different scopes and meters, an adjustable exposure check tool, advanced pixel level measurement capabilities, live side-by-side monitoring, the ability to upload and store up to 16 3D DIT LUTs, a video data analyzer, loudness meter and CIE scope. Additional capabilities include anamorphic de-squeeze functionality for 1.3x, 2.0x, 1.3xMag, and 2.0xMag de-squeeze ratios, a variety of zoom modes, pixel mapping for non-native HD signals, markers, timecode, focus assist and log monitoring modes.

The DM240 can also utilize Flanders Scientific's IP Remote Utility and ScopeStream applications for Windows or Macintosh computers. The IP Remote Utility allows for IP remote control of the connected monitor as well as full resolution frame grab and recall. With ScopeStream, the DM240 transmits real-time waveform or vector scope data over IP so that they can be viewed on a connected computer leaving the reference monitor's screen unimpeded.



The DM240 also offers direct integration with on-set color management solutions like Pomfort's LiveGradePro, Filmlight's Prelight, Firefly Cinema's Fireplay and QTAKE's Grade module allowing for on-set color grading without the need for a standalone LUT box. The monitor features dedicated second screen outputs for distributing manipulated images to downstream equipment, a true Zero-Delay processing mode and signal cross-conversion making the DM240 the most state-of-the-art 24-inch monitors in the industry.



flandersscientific.com/DM240

FRAME.IO

Frame.io 2.0

Streamlined Editorial Collaboration and Review Workflow for Content Creators

Frame.io, developers of the video review and collaboration platform for content creators, unveiled Frame.io 2.0, a massive upgrade boasting more than 100 new features and improvements to their flagship editorial review/collaboration platform. Lauded as a quantum leap forward in media sharing and client collaboration, Frame.io 2.0 has incorporated customer feedback from the original platform to bring speed and simplicity to collaborative editorial processes.

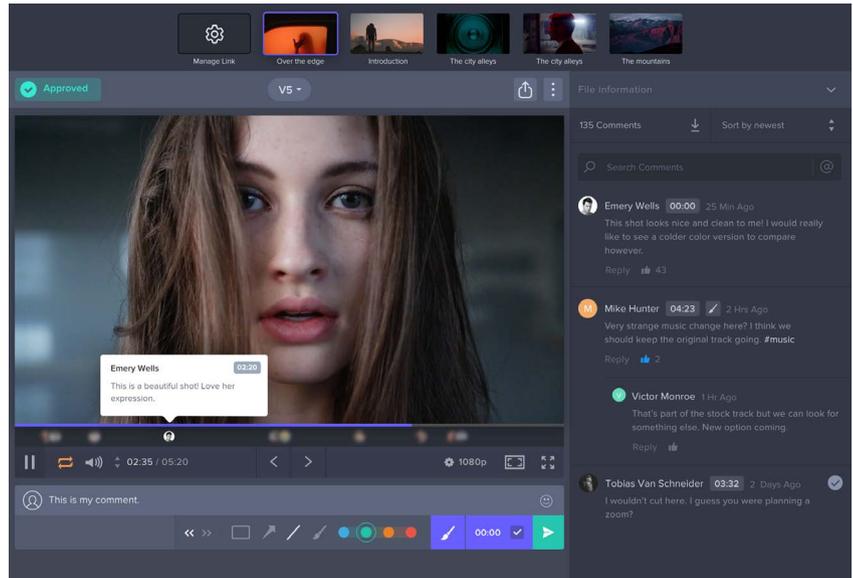
Optimized for true collaboration, the all-new Review Pages feature allows internal teams to collaborate using Frame.io's comprehensive annotation and feedback tools, while clients can provide detailed feedback on projects, putting an end to "feedback paralysis" once and for all. With no login required, settings are highly configurable to meet any one customer's specific needs. This includes workflow controls (approvals), security (password protection, setting expiration date) and communication (including a personalized message for the client). And for those using Adobe® Premiere® or After Effects®, those thoughts flow directly into the timeline, where you can immediately take action and upload a new version.

By eliminating confusing email threads, the friction-free Review Pages enhances the overall workflow for post-production professionals. Exporting and importing comments and annotations into Final Cut Pro X and Avid Media Composer is now easier than ever, with the upgraded, free desktop companion app, which allows users to open downloaded comment files and bring them into the editor as markers, removing the need to toggle between Frame.io and the NLE.

In addition, users can also now copy and paste comments from one version to another, ensuring feedback is never lost. The information is exportable in a variety of formats, whether that's a PDF containing a thumbnail, timecode, comment, annotation and completion status that can be shared and reviewed with the team, or as a .csv or .xml file containing tons of additional data for further processing. Also new to Frame.io 2.0 is a SMPTE-compliant source timecode display that works with both non-drop and drop frame timecode. Keeping workflows in mind, Frame.io had given the Player page a

serious makeover, and now offers greater navigation, efficiency and accountability. New "comment heads" allow artists to visually see who left a comment and where, so they can easily and quickly find and prioritize feedback on any given project. Users can also preview the next comment, allowing them to fully grasp feedback, saving them time when one comment affects another.

Speed and simplicity are paramount in the brand new Frame.io 2.0



dashboard, which has been redesigned from the ground up. Users can manage collaborators for any given project from the all-new collaborator panel, where adding an entire team to a project is just one click away. A simple search in the project search bar makes it incredibly easy to bring up a project. Artists' getting lost in their work are cared for as each move and edit is saved deeper into a sub-sub-subfolder, crucial for remaining oriented even when lost in a project.

Though this version is new to market, the improvements made in Frame.io 2.0 promise to revolutionize the way teams create content. With the ability to publish directly to Vimeo, full control over publishing options, and other major additions to and improvements in version 2.0, creators will find that the collaborative editorial process is forever changed.

frame.io



INTEL CORP.

Intel® VCA 2 Transcoding Add-In Card

Extreme Channel Density With Outstanding TCO for Xeon® E5-Hosted Servers

Video already accounts for 82 percent of consumer internet traffic and 75 percent of mobile data traffic (Cisco Visual Networking Index, 2016), driving ever more demand for bandwidth-saving dense transcode.

Built around the energy efficient, visually amazing Intel® Iris™ Pro Graphics P580, Intel® Visual Compute Accelerator 2 (Intel® VCA 2) enables you to deliver the rich visual experiences end users seek.

Whether you transcode HD and UHD video in cable headends and OTT clouds, or provision cloud-based 3D games, Intel® VCA 2 has the horsepower to handle the most demanding workloads.

With three Intel® Xeon® processor E3-1585L v5, this PCIe* accelerator card delivers cutting edge transcode and rendering performance per watt for server systems hosted by Intel® Xeon® processor E5 family.

For OTT content providers and telecommunications service providers, Intel® VCA 2 takes the next step in transcode density, adding HEVC encode into the Intel® QuickSync Video portfolio of hardware-accelerated codecs.



www.intel.com/accelerators

JVCKENWOOD USA CORP.

PB-CELL200 ProHD Portable Bridge

Portable 4G LTE Bonded Cellular Uplink

Carry it anywhere! This portable bridge is a powerful bonded cellular hotspot that features Peplink's patented SpeedFusion™ technology that allows you to reliably stream your JVC camcorder signals to any destination on the internet. Unlike typical bonded solutions, the PB-CELL200 enables you to stream live video from multiple cameras to HD-SDI decoders or servers at a central location. It comes with dual cellular modems with redundant SIM slots letting you use up to four different cellular providers for bandwidth bonding, data overage protection or eliminating blind spots.

Dual-band Wi-Fi gives you two independent high-speed networks that work together (2x2 MIMO) to maximize throughput. In addition to live streaming, it functions as a secure hotspot for connecting computers, tablets, smartphones and other devices to the internet or to your enterprise LAN with a secure VPN. When used with IP-capable JVC ProHD, PTZ and 4KCAM cameras, you now have not only streaming, but full remote camera control and IFB audio on select models. JVC's Wi-Fi-equipped cameras connect to the unit without cables leaving you free to position the Bridge in its most optimal location.



Main Features:

- Robust, bonded LTE connection for multiple streaming cameras, encoders and decoders
- Totally self contained — no modems strapped on
- Powered from Anton-Bauer battery (optional) or from included AC adapter
- Dual embedded cellular and redundant SIM slots
- Accepts SIMs from Verizon, T-Mobile, A.T.& T. and Sprint
- Aggregates up to four network links (Cell x2, plus Wi-Fi or Ethernet)
- Powerful omnidirectional fiberglass encased high gain (3–4 dB) cellular antennas
- Wi-Fi connection to JVC cameras provides location flexibility
- Webcasting HW/SW devices via LAN or Wi-Fi
- Stream live video to JVCVIDEOCLOUD, Facebook, YouTube or any other CDN
- Powerful internet hotspot for computers, smart devices
- Two RJ-45 connectors for wired LAN connections.
- Extends enterprise LAN into the field with a secure VPN
- GPS receiver provides location to central server
- Full-command console control of all of your cameras and remote cellular bridges
- Economical cellular data packages available from JVC
- Global LTE Advanced and FirstNet options available
- All ProHD Bridge products are FCC/CE-certified and comply with RF exposure absorption (SAR) safety standards.



pro.jvc.com

KINO FLO LIGHTING SYSTEMS

Freestyle LED Lighting System

Modular, Portable Lighting Fixture With Removable LED Panel & Wireless DMX

Kino Flo Lighting Systems premiered its new Select Freestyle line of location lighting systems for motion picture and television production during the 2017 NAB Show.

The new Freestyle comes with a durable, lightweight LED panel that can easily be removed for use as practical lighting or for mounting in tight quarters on location. Weighing in at 8 pounds/3.5 kg, the removable Freestyle LEDs are a force multiplier when it comes to production lighting. The LED panels come with rigging points for suspending from a grid or screwing into a set wall, and a twist-on mounting plate assembly for 360-degree control and building into light arrays.

Like all Select LED Kino's, the Freestyle panels deliver bright, controllable >97 CRI white light, full hue and saturation control color, cinema gel presets, and RGB chromatic selection via the AC/DC Select controller. Lighting professionals also can program Freestyle fixtures to operate between 2500K to 9900K, or choose a full range of color, lumen level, and green/magenta correction remotely by standard DMX or wireless DMX. The same hand-held Select controllers can run fixtures on 50 feet of head cable without hooking into a control board.

Color and luminosity remain stable over the rated life of the LED's using Kino Flo's advanced True Match® daylight and tungsten color management system.

The passive-cooled fixtures do not overheat the LED's, so — no heat sink fins or whirling fans. The Freestyle's 150W Select Controller technology achieves bright, soft light with continuous dimming from 100 percent to 0 percent on a linear or square curve without flicker at high camera speeds or at varied shutter angles. There is no light level change when shifting from 2500K to 9900K, and the color doesn't change when the light levels rise or fall.

The Freestyle comes complete with the full color, programmable Select controller, Head Cable (25 feet), Complete Fixture with removable LED panel and a twist-on Center Mount with the new KinoGrip for hand-held lighting. Like the original Select LED systems introduced last year, the Freestyle is available in Select 31 (3 feet) and Select 21 (2 feet) sizes.

The new Freestyle fixtures join the growing family of Kino Flo lighting products, including new this year at the NAB Show in Las Vegas: The Celeb 250, 450, 450Q and 850 LED full-color studio fixtures, with an expanded chromatic palette and improved light output.



LEYARD AND PLANAR, A LEYARD CO.

Leyard LED MultiTouch

First Seamless LED Touch Video Wall

The new Leyard® LED MultiTouch is the industry's first seamless LED touch-enabled video wall, providing a seamless, smooth light-weight durable touch surface that delivers superior performance enabled by patent-pending Leyard® PLTS™ (Pliable LED Touch Surface™) technology.

The breakthrough Leyard LED MultiTouch brings advanced interactivity to fine pitch LED video walls, opening up LED display technology to a wide range of collaborative applications that until now were the sole domain of LCD displays. From broadcast to corporate settings to education institutions, Leyard LED MultiTouch offers a seamless touch experience for LED video walls up to 196" diagonal with high resolution 1.2 millimeter pixel pitch.

surface material is extremely durable, protecting the video wall from damage that can occur from casual contact or debris getting on the display, while avoiding the heat that is commonly trapped in protective glass installations. The lightweight touch surface can easily be removed and then reapplied, making it easy to service. It is also straightforward to clean, requiring only a simple cleaner and cloth.

- Fits almost any environment: The Leyard LED MultiTouch is lightweight, thin and unobtrusive, making it ideal for almost any environment since it does not dramatically affect the mounting depth of the video wall.

Benefits of the Leyard LED MultiTouch include:

- High-performance touch: The Leyard LED MultiTouch allows for up to 32 simultaneous touch points, enabling multiple users to simultaneously interact with the video wall without affecting other users. The touch experience is accurate and intuitive, with excellent tactile feel and a smooth, anti-static surface.
- Superior image quality: Unlike glass panels, which can trap heat and reflect light, the Leyard LED MultiTouch features proprietary Leyard PLTS technology for an anti-glare surface that eliminates the distracting reflections that can occur in well-lit environments. The display delivers a crisp, high contrast image using the highest quality black LEDs and maintains uniform color and brightness, even when viewed off-axis.
- Durable and easy to service: The Leyard PLTS touch



www.leyard.com/LEDMultiTouch

LIVEU

LiveU Solo

Wireless Streaming Solution With One-Touch Integration Directly to Facebook

LiveU Solo is a high-quality, plug-and-play live streaming device for the online media market built on LiveU's proven bonding technology. Solo is the streaming solution of choice for major online media companies, including AOL/Huffington Post, The New York Times, BuzzFeed, Funny or Die and Facebook. The affordable solution is easy enough for the pro-



fessional content creator or consumer to use to create high quality streams. Solo allows users to live stream seamlessly directly to Facebook Live and other popular social media and on-line video providers. Solo is simple to manage and control remotely via a web interface or smart device.



gosolo.tv

MAGEWELL ELECTRONICS

USB Capture Plus Video Capture Devices

Professional Capture Power Up to 4K With Plug-and-Play Ease of Use

Magewell's feature-rich USB Capture Plus external video capture devices enable all types of computers including laptops to capture professional video and audio signals through a standard USB 3.0 interface, with no additional power source required.

Building on the powerful functionality, quality and reliability that have made Magewell's previous-generation USB products the preferred choice of video professionals, system integrators and high-end hobbyists, the cost-effective new USB Capture Plus models add even more professional features including signal loop-through, expanded audio support, and full-resolution 4K capture (up to 4096x2160, including 3840x2160 Ultra HD) on select models.

Featuring a driver-free design and automatic input detection for true plug-and-play operation, the devices support Windows, Mac and Linux operating systems and offer broad compatibility with popular streaming, encoding, live production, collaboration, video conferencing, medical imaging and lecture capture software.

The USB Capture Plus series includes FPGA-based video processing, providing high-quality deinterlacing, up/down conversion and image controls while maximizing host system CPU availability for third-party software — particularly significant when working with the quadrupled resolution of 4K video.

Five USB Capture Plus models offer a flexible choice of input connectivity and capture resolution.

The USB Capture HDMI Plus captures video up to 1920x1200 or 2048x1080 at 60 frames per second over its HDMI 1.4 interface, while the USB Capture HDMI 4K Plus also supports 4K inputs up to

60 fps via HDMI 2.0 connectivity, capturing them at 30 fps. The USB Capture SDI Plus captures video up to 1080p60 over its 3 Gbps SDI input, while the USB Capture SDI 4K Plus captures 4K video at 30 frames per second via 6 Gbps SDI. 4K inputs with 4:4:4 or 4:2:2 color sampling are automatically converted to 4:2:0 for full-resolution capture in the NV12 or I420 color space formats, to fit within the bandwidth available in the USB 3.0 standard.

All HDMI and SDI USB Capture Plus models offer loop-through connections, reducing workflow costs and complexity by enabling source signals to be sent simultaneously to additional displays or equipment without the need for external splitters or routers. This cost-effective convenience combines with the devices' rich feature set and extensive compatibility to make them ideal for both end-user applications and as "glue" solutions for systems integrators implementing complete infrastructures.

The fifth model, the USB Capture DVI Plus, can capture video up to 1200p60 through its DVI interface, with automatic down-conversion from inputs up to 2048x2160. The DVI model can also capture HDMI sources, as well as VGA or component analog video signals, with the use of simple adapters.

HDMI or SDI embedded audio support is complemented by additional audio inputs and outputs for capture and monitoring: line-level analog input and output connections on SDI and DVI models, and an analog microphone input and stereo headphone output on HDMI configurations. FPGA-based audio processing featuring ASRC technology delivers superior USB audio handling, while the included USB Capture Utility software gives users advanced control of processing settings and access to detailed status information.

Magewell's USB Capture Plus external capture devices — the ideal solutions to capture your future.



www.magewell.com/usb-capture-plus-family

MANFROTTO

Nitrotech N8

Fluid Video Head With a Nitrogen Piston Providing Continuous Counterbalance

Witness a Revolution in Videography. Experience a revolutionary head, which combines all of the features from the Manfrotto Video range — the variable fluid drag system, side lock sliding plate attachment, flat base and Easy Link connection technology — with an added breakthrough which provides continuous counterbalance: a nitrogen piston.

Nitrotech is the head which bridges the old and the new in high-end professional cameras. Professional-tested touches include:

- A first-of-its-kind nitrogen-powered piston which provides continuous counterbalance.
 - A quick side lock release plate, which allows the operator to attach or detach a camera in a matter of seconds.
 - 75mm flat mounting for attaching to sliders or jibs; adapters allow for tripod use with a half ball.
 - Illuminated leveling bubble, which allows the operator to see if the camera is level, even in the dark.
 - Safely holds a payload of 17.6 lbs.
 - Nitrotech's head is available for purchase for \$449.99
 - Two tripod kits are also available:
 - o An aluminum Manfrotto 546B twin-leg model for \$949.99
 - o A carbon fiber 535 single-leg model for \$1,179.99
- Nitrotech debuted worldwide at the NAB Show and is available for purchase at manfrotto.us and Manfrotto authorized dealers.



www.manfrotto.us/nitrotech

MARSHALL ELECTRONICS

CV225 Full-HD Lipstick Broadcast Camera

The Latest Sensor Technology in a Compact and Sleek Weatherproof Design

Capture stunning, full-HD video in a versatile, durable and discrete package with the new Marshall CV225 Weatherproof Lipstick Camera. The CV225 utilizes the latest sensor technology in a compact and sleek weatherproof design while maintaining professional broadcast video standards. The CV225 is an ideal solution for broadcast television applications including professional sporting events, reality television, broadcast trucks, weather vehicles and house of worship installations.

Marshall worked closely with professional video and systems integrators to improve the popular first-generation CV200 Lipstick Camera. The second-generation CV225 IP67 Lipstick Camera offers improved image clarity, enriched true colors, enhanced low-light performance and the added ability to remotely adjust without reliance on-screen display (OSD) menus.

The CV225 utilizes a state of the art 1/3-inch high-speed 2.5 mega-pixel sensor to pack 2,476,296 pixels of clear, crisp video through a single full-sized 3G/HD-SDI (BNC) output in 1920x1080i, 1920x1080p, or 1280x720p resolutions, at 60/59.94/50/30/29.97/25 fps.

New proprietary pixel technology enables the CV225 to produce the lowest noise ratio on the market today, resulting in sharp, vivid color images, even in very low light conditions; as low as 0.2 lux in color. Industry leading low power consumption draws very low power in full 3G SMPTE 424M (2.97 Gbps) 1080p60/59.94/50 modes.

The CV225 IP67-rated weatherproof design, small footprint and convenient 1/4 inch-20 mount allows for versatile mounting options in any outdoor or hidden location, and can withstand dust, sand or full submersion up to 1m for 30 minutes. The 10-foot breakout cable al-



lows for remote control and adjustment via SONY VISCA over RS-485 twisted-pair wire, and is compatible with the Marshall CV-RCP-100 Touchscreen RCP Unit using three-pin XLR cable. The CV225 is offered in two models, depending on region of use. For US broadcast applications, the CV225-MB supports 59.94/29.97 fps, and the CV225-M supports 50/60/25/30 fps for all other broadcast regions.

The Marshall CV225-MB/M is available now through Marshall Dealers worldwide.

www.lcdracks.com/servers-cameras/HD-SDI-cameras/CV225-MB-M-Weatherproof-Lipstick-POV-Camera.php

MARSHALL ELECTRONICS

CV-RCP-100 Remote POV Camera Controller

Operate, Adjust and Match Multiple POV Cameras Without Leaving the Truck

Remotely operate and adjust seven broadcast POV cameras at once from up to 300 meters away with the lightweight, convenient and intuitively designed Marshall CV-RCP-100 Remote Touchscreen RCP Camera Controller. Specifically designed for use with broadcast POV cameras, the CV-RCP-100 enables integrators to perform precision adjustments to carefully match cameras in the field, without leaving the broadcast truck or control room.

The CV-RCP-100 features an intuitive touchscreen user interface, designed with intelligent menu and submenu layouts. Right out of the box, the CV-RCP-100 comes pre-programmed with self-help dialogs, favorites settings, save features and auto-updating firmware. A pair of fine-tune adjustment knobs enable precision adjustments for white balance, red/blue gain, gamma, brightness,



exposure, shutter, frame rate and more. Remote adjustments can be applied to multiple cameras simultaneously or individually for each camera.

The CV-RCP-100 utilizes a secure locking 3-pin XLR connector for reliable transmission of Visca protocols over RS-485/RS-232 up to 300 meters away. USB input allows for saved settings to be quickly shared or backed-up among multiple units for enhanced reliability for mission critical applications.

The CV-RCP-100 is compatible with all current Marshall ProSeries POV, Zoom Block, and PTZ Cameras, and is pre-programmed with control protocols for popular non-Marshall branded cameras on the market.

The Marshall CV-RCP-100 is available now through Marshall Dealers worldwide.

www.lcdracks.com/servers-cameras/accessory/Touchscreen-RCP-Camera-Control.php

NEWTEK

TriCaster TC1 — 4K IP Video Production

The First Affordable End-to-End 4K IP Video Production System

TriCaster TC1 is the culmination of more than a decade of IP video experience for live production, with uncompromising support for 4K UHD switching, live streaming, recording, data-driven graphics, virtual sets, social media publishing and more. Continuing innovation around the iconic product that has defined an industry, TriCaster TC1 supports 16 external inputs of up to 4K UHD 60p resolution without sacrificing functionality. Powered by NewTek's NDI™ technology for IP-based workflows, TriCaster TC1 also offers multiple studio-grade Skype TX channels for adding remote video guests to live shows.

IP Makes 4K a Reality — Today NewTek's software-driven, IP-native approach to 4K eliminates the need for conversion to and from baseband video, allowing all integrated features including video playback, mix/effect busses, keying layers, and streaming to be 4K-capable without limiting the number of available resources. TriCaster TC1 has 16 inputs available, regardless of video resolution.

Live Streaming and Publishing of Recorded Content — With the explosion of online and mobile video, broadcasters and content producers need a way to stream live and encode/publish video to social media quickly and easily. Whether you need to go live for breaking news or post recorded video clips that viewers can see on demand, TriCaster TC1 handles it all. Users can stream directly to Facebook Live, YouTube Live, Microsoft Azure, Periscope, Twitch, and other streaming sites, or deliver video clips directly to social media sites right from the TriCaster TC1 interface.

The Most Complete Solution — It's not just the ability to deliver content that makes TriCaster TC1 so special. It is truly a production powerhouse with an unbelievably rich feature set that typically requires 4 or 5 other devices to accomplish in traditional baseband video workflows. With built-in video servers, macro automation, advanced chroma-keying, ISO-recording, replay, and more, TriCaster TC1 ideally suits broadcasters, sports, esports, educational organizations, corporate

entities, houses of worship, event producers and digital video teams looking to get the most production power with high-quality content delivery in a single system.

Integrated Skype TX — A new feature with TriCaster TC1 is integrated multi-channel Skype TX integration. NewTek is the only company to offer this functionality in a live production system in the world. Any one of the TriCaster TC1's 16 external inputs can be designated for live,



broadcast-quality Skype video calling, giving producers the capability to reach any one of the 300 million monthly active users of Skype and deliver a pristine HD video call with balanced audio. With studio-ready call control from an external laptop or workstation running the Skype TX controller application, calls can be configured and monitored without impacting the TriCaster TC1 operator's workflow. Other active call channels from NewTek TalkShow® systems can be managed from the controller for additional call capacity and streamlined management.

A World of Connectivity — Like its predecessors, TriCaster TC1 is an integrated solution, however, TC1 is also very capable of connecting to the bigger IP universe. With native integration of NewTek's NDI™ technology, TriCaster TC1 connects to the most prolific IP-based ecosystem in the industry, networking seamlessly with compatible products from hundreds of manufacturers and developers. This means that many connections to both NewTek and third-party products from TriCaster TC1 will be direct via IP without any baseband video connections.



www.newtek.com/tricaster/tc1

OUTSIGHT

Creamsource Micro LED Lighting Unit

Its Compact Form Factor Fits Into Small Spaces While Still Packing a Punch

The Creamsource Micro is Outsight's latest addition to its acclaimed LED lighting range, with all the advanced LED technology of the larger Creamsource units in a smaller package. Its power is unbeaten but it can squeeze into small spaces and takes up very little storage space or stowage. Not only is it easy to rig and derig, it is also Outsight's most cost-effective fixture to date.

In terms of size, the Micro is less than half the size of the Creamsource Mini+, with dimensions (without yoke) of 220 x 205 x 100mm (W x H x D), and weighs in at approximately 2.5 kg. It is also extremely weatherproof with a rugged, waterproof design and IP65 rating. Light output meets the same excellent quality as the rest of Creamsource range, with color temperature adjustable from 2700 to 6500K and a CRI/TLCI of greater than 90. Drawing only 80W, the Micro rivals the light output and punch typical of some 200W HMI Luminaires. Unlike most bicolor fixtures, it maintains constant

power output across the whole CCT range, so users will always get the unit's full potential and they will not have to choose between a bicolor or daylight system. Another key innovation of the Micro is its wide 10-32V operating voltage, allowing users to power the fixture from a single 90WH battery, or directly from a car.

There are three main different rigging options: Quick-release yoke, Kino Flo-style Twist-on Mount, or single 3/8th thread. In addition, numerous accessories are available including a choice of V-Lock or Gold Mount-style quick release battery plates for easy portability, a Snap-Bag light-bank from DOP Choice, Outsight's high-efficiency holographic lens system and a hardwearing soft travel case.

Outsight is confident that due to the Creamsource Micro's punch, form factor and aggressive pricing, it will quickly become an invaluable part of any lighting setup. The new LED lighting unit made its global debut at the 2017 NAB Show and is scheduled to ship in May 2017.



ROSS VIDEO

Furio SE Robotic Camera System

Higher Performance, Easier to Install and Maintain, and Safer to Operate

The latest Furio robotic camera systems have been branded Furio SE — for Smart Evolution. This is a higher performance Furio, that is easier to install and maintain, and safer to operate.

The lift has been redesigned using carbon fiber to increase functionality. It delivers a 50 percent increase in extension range, while increasing overall height by almost 40 centimeters, or more than 15 inches.

Lift speed has also increased — doubling to 15 centimeters, or 6 inches, per second, enabling the camera to get into position more quickly, even with the increased extension range. The lift has been re-engineered by adopting a proven linear-rail-based design.

The lift wiredraw has been replaced by an internal magnetic strip encoder, eliminating the potential for interference between the wiredraw and cables that could occasionally cause errors in the lift position reading.

Two sets of handles near the top and bottom of the lift were custom designed to provide multiple hand-hold positions during installation of the lift on the dolly. The exterior profiles have been carefully formed to make sure that cables between the head and the dolly never catch on the handles as the head and lift are repositioned.

A rocker switch on the dolly permits the lift to be raised and lowered locally, without requiring a control system or joystick panel. The position of the lift can be read off an extension scale integrated on the side of the second stage.

The electrical connection between the lift and dolly uses a sliding blind mate mechanism that makes completing the lift assembly fast, while protecting the cable and connectors from damage.

All electrical circuits are contained within two field replaceable units, to simplify fault management, servicing and replacement. Each FRU can be replaced in minutes.

The power and control FRU has an array of status LEDs to make fault identification and diagnosis quicker and easier. Connectors lie parallel to the top of the FRU, where they are well-protected from accidental damage.

Power management has been simplified, with autosensing 110/220 Volt DC power supplies, 24 and 48 Volt outputs for powering the pan/tilt heads, and an integrated power strip for providing mains power to cameras, prompters and other accessories.

Onboard front and rear E-Stop buttons bring the system to a controlled stop in the event of an emergency, by instantly cutting power to the dolly, lift, and head. This latches the lift in its current position, and the dolly comes to a smooth controlled stop. The head becomes free-wheeling, so that it to be manually repositioned if necessary.



To warn people in the vicinity that the system is beginning to move, front and rear light bars gently flash whenever any robotic movement is in progress. The brightness of the lights can be dimmed to suit the specific operating environment.

Track speed can also be increased by as much as a third with the new dolly, due to the addition of safe-t-glide wheels that ensure the dolly does not tip during rapid moves, especially around curves.

The Furio SE Studio and Furio SE Live share the exact same dolly and lift hardware, which can be reconfigured for use in either scenario. So if both systems are needed such as for rental or large broadcast facilities, a common system can be used for both applications.

ROTOLIGHT

AEOS — The Pioneering LED Location Light

One of the Most Portable, Powerful and Lightweight Location LED Lights

The AEOS is the latest LED lighting innovation from Rotolight that will bring versatility and flexibility to any shoot. The bicolor location light provides powerful light output and energy efficiency, and is also lightweight (under 1.5 kg) with an ultra-thin design (1 cm). As one of the most portable lights on the market, the light's overall combination of cost, versatility and industry-first features allows users to unleash their creativity in a way no other light can.

The AEOS is the first light of its kind to include integrated handles in the design. The aluminium handles allow users to shape and manipulate the light in different ways. It is easy to transport, carry and hold during filming, which means that photographers, videographers and filmmakers can work more freely and more creatively with the light.

The AEOS has gone against convention and instead of the traditional yoke, which limits movement of the light to just 30–40 degrees, it features a ball head that provides a full 360-degree range of movement and 200 degrees of tilt when mounted to a light stand. This makes it incredibly versatile and enables users to achieve lighting setups not otherwise possible with traditional light sources.

The AEOS delivers a powerful light output of 5,750 lux at three feet yet remains one of the most energy efficient LEDs on the market. The light has a runtime of three hours at 100% power on a single 95W battery — which is more than twice as long as the industry standard. This is particularly beneficial for location use, as fewer batteries are needed and powering the lights off mains may not be necessary.

The AEOS includes a host of patented features, unique to Rotolight that enable users to be more efficient, effective and creative:

- *CineSFX™* — a suite of cinematic lighting effects, such as lightning, fire and TV flicker that can be reproduced quickly and easily without the need for additional equipment, such as a flicker box.
- *True Aperture Dimming™* — this feature calculates and displays the *f*-stop for a subject at a given distance and brings an added element of accuracy and efficiency to workflows.
- *Designer Fade™* — provides custom fade up/down production effects for use in interview settings, studios or filmmaking. This means no post production work is needed on fading between scenes, saving both time and expense.
- *High Speed Sync Flash (HSS)* — users can turn the AEOS into a powerful HSS flash with zero recycle time. The light flashes at 250% of the maximum continuous light output for traditional photographic work-



flows, providing brightness, performance and versatility.

- *AccuColour™* — Rotolight's patented LED phosphor technology ensures that the AEOS can deliver exceptional color rendering (CRI:96+) and scores in the highest category on the independently-tested Television Lighting Consistency Index (TLCI). This also ensures that this no need for color correction in post production.

The AEOS features several accessories as standard, including:

- A full set of filters; two diffusion filters, a cosmetic peach skin tone diffusion to 'warm' the subject, and a magenta filter
- AC/DC power supply
- Aluminum ball head

There is also a full range of optional accessories available, including:

- A custom-made soft bag capable of holding up to two lights with barn doors, two batteries and two stands,
- V-lock batteries
- Barn doors
- Rain covers
- Soft boxes
- A yoke for studio truss-mounting

The AEOS will transform the ways in which photographers, videographers and filmmakers work bringing rich functionality, cost-effectiveness and efficiency to any shoot.

www.rotolight.com

SENNHEISER ELECTRONIC GMBH & CO. KG

MKE 2 Elements Action Camera Microphone

The World's First Waterproof and GoPro-Verified Mic for the HERO4

The rugged MKE 2 elements miniature mic is the very first GoPro®-verified (“Works with GoPro”) external microphone for the HERO4 Black and Silver cameras. It is also the world’s very first waterproof microphone for a GoPro, bringing fully-fledged audio (20 to 20,000 Hz) to exciting pictures in any condition. It can record under water, in snow, rain and dust, allowing users to add fantastic sound to their breathtaking GoPro images. The microphone will be a true game-changer for millions of users.

A look back: Up until now, HERO4 users were facing the problem of poor sound quality with their recordings, simply because built-in microphones in general are prone to wind noise problems and have size constraints — factors that make good outdoor audio recordings nearly impossible. An additional problem is that internal microphones pick up a large amount of structure-borne noise when mounted onto sports gear. Also, encapsulating the HERO4 camera in a protective housing will seal off its built-in microphone against sound — very much like putting your microphone in a can and closing the lid.

Designed within the framework of the GoPro® Developer Program, the MKE 2 elements was developed to address these challenges. The professional-quality miniature microphone is based on the MKE 2 — a standard for stage, theater and musical applications — and therefore able to record the full audio spectrum from 20 to 20,000 Hz.

Inside the microphone capsule, an internal umbrella diaphragm protects the acoustically active membrane against water. The microphone is fitted with an elastic suspension to decouple it from any structure-borne noise that occurs in tough use. The connection to the camera’s protective housing is watertight.

The replaceable windshield of the MKE 2 elements utilizes a special foam material that ensures that the



mic will fully retain its wind protection properties even when used for water sports. While classic hairy or foam windshields cease to offer wind protection when they become wet, the windshield of the MKE 2 elements maintains its protective function and even records underwater. The ingress protection rating of the MKE 2 elements is IPX7, it is waterproof up to 1 bar (1 meter/3 feet for 30 minutes).

The combination of these features and technologies drastically improve the user experience; they even enable sound capture in situations where recordings were previously impossible. The MKE 2 elements microphone can be used everywhere that the GoPro HERO4 can, in rain, snow, water or dust, keeping the camera sealed in its protective housing.



www.sennheiser.com

SIGMA CORP. OF AMERICA

Sigma Cine High Speed Zoom Line

Supreme Optical Quality for an Unprecedented Cinema Lens Price Point

In September 2016, Sigma announced its entrance into the cinema lens market with the release of Sigma Cine Lenses. A longtime player in the digital imaging industry known for its innovative design and high quality still photography lenses, Sigma's foray into the cinema lens industry follows the same path of excellence that customers have come to expect from the company. With its Cine Lenses, Sigma strategically identified an opportunity in filmmakers' demands for higher resolution capabilities and premium quality and capitalized on it by creating cinema lenses designed for the highest resolution cinema cameras.

Heading up Sigma's arsenal of Cine Lenses is the Sigma Cine High Speed Zoom Line, which includes the 18-35mm T2 and 50-100mm T2 zoom lenses. These two ultra-versatile lenses offer a constant aperture of T2 throughout the zoom range and feature 180-degree focus rotation along with the highest image quality in their class. Additionally, the Sigma Cine High Speed Zoom Line is compatible with the Super35 image size standard and available for EF and E mount cinema camera systems, with PL mount capability. All of this, combined with the lenses' compact construction and desirable price point, make these lenses a great option and an amazing value for filmmakers.

While these Cine Lenses leverage the outstanding optical design found in Sigma's celebrated Global Vision



line with 100 percent retained optics, they also feature a 100 percent new mechanical lens body design, created to specifically cater to the needs of the modern cinematographer. In order to make these lenses available for mass distribution, Sigma developed its own manufacturing process, establishing the required technology for mass production of high-performance lenses for ultra-megapixel shooting, in its Aizu, Japan factory.

Designed for filmmakers at all levels, the Sigma Cine Lenses are suitable for student to indie to big-budget Hollywood productions. Filmmakers looking for high quality, reliable lenses at attractive prices will find the 18-35mm T2 and 50-100mm T2 lenses to be a perfect fit. At \$3,999 USD each, these lenses are great for filmmakers just starting out or working on a budget. The High

Speed Zoom Line is also ideal for filmmakers shooting across a range of high-quality formats, as the lenses are equipped with 4K, 6K and 8K capabilities.

While the Sigma Cine High Speed Zoom Line was announced just seven months ago, the lenses have already been used by cinematographers on several projects ranging from commercial work, to indie films, to shorts designed specifically for OTT distribution on platforms like YouTube. Across the board, cinematographers have seamlessly integrated the Sigma Cine Zoom Lenses into their production workflows, lauding the Cine Lenses' speed, versatility and highly competitive prices.



www.sigmaphoto.com/cinema-lenses/highspeedzoom

SIMPLESTREAM LIMITED

Cloud TV Platform

Enabling Next-Gen TV Everywhere Services on All Screens

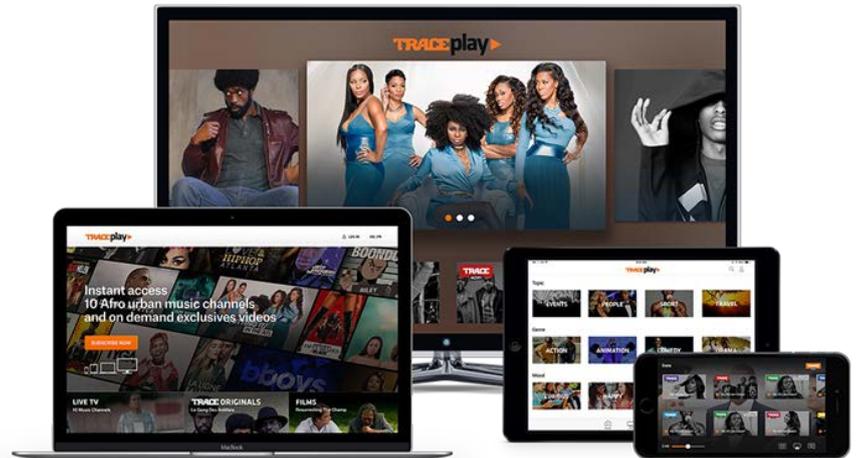
Finding an OTT video platform that isn't too costly or complex to manage can be a difficult task for smaller channels and larger operators alike. However, as the demand for additional content services beyond broadcast grows, it is crucial that smaller channels and networks can meet consumer demand for additional services. With this in mind, Simplestream developed its Cloud TV Platform: a rich multi-screen streaming solution supporting a wealth of subscription or ad-funded use-cases including live streaming, catch-up and VOD for broadcasters, telcos, TV operators and others across the media industry. As a streamlined end-to-end solution, it reduces the complexity and costs of delivering this rich OTT feature-set across every platform and device with:

- Cost-effective white-labeling of existing user-experiences but with full flexibility to customize where required
- Universal content ingest options for Live and VOD as well as all associated metadata and promotional graphics
- Comprehensive rights management to control program availability ensuring full conformance to content rights
- High-quality, efficient on-premise or cloud-based encoding enabling delivery to all target partner platforms and devices
- Automated catch-up creation from linear channels
- EPG ingest and display across all devices with backwards-scrolling catch-up access
- Best-in-breed subscriber/user management with in-depth churn management
- Content discovery: optional integration with powerful recommendation engine
- Support for all major device DRMs and common use-cases including download for offline playback
- Full control from any location via the web-based Media Manager portal or can be integrated into other systems via comprehensive APIs.

Built on Simplestream's powerful Media Manager modules that provide unrivalled flexibility across the entire delivery workflow, Cloud TV Platform launched in summer 2016 and drives TV Everywhere services for A+E Networks, Trace and the National Women's Soccer League amongst others.

- *A+E Blaze*: Cloud TV Platform enables the delivery of A+E Blaze's TV Everywhere service in the U.K. including live TV, catch-up TV and VOD to desktop, iOS, Android and Apple TV users. Announced in November 2016, the entirely cloud-based solution provides A&E Blaze with a power-

ful and fully automated workflow. The Simplestream team completed a comprehensive integration with A+E's playout provider to create a single unified workflow that ingests the live channel and creates VOD assets directly from A+E's Media Asset Management system — including full management of associated metadata and media rights controls.



- *NWSL*: A professional women's soccer league run by the United States Soccer Federation. Simplestream worked with NWSL Media to build a highly interactive, free sports streaming service to showcase over 100 live matches annually, additional VOD content — including pre-match interviews, extensive news, highlights and game statistics. Launching this month on web (www.nwslsoccer.com), iOS and Android, the service is expected to also roll out to additional devices like Apple TV, Amazon Fire TV and Roku later this year.
- *TracePlay*: Cloud TV Platform was chosen by MTG-owned Trace, the urban music and entertainment global media group, to power its new subscription video on demand (SVOD), live TV and radio offering TracePlay — www.traceplay.tv. The innovative service launched in March 2017 on desktop, iOS and Android mobile and tablet devices and Apple TV — built in an industry-leading turnaround time of less than 12 weeks — and will be progressively available to the entire world starting with 80 countries (the U.K., Ireland, United States, Africa, the Caribbean, all French-speaking European countries and Netherlands). The service is slated to be available on additional devices such as Amazon Fire TV, Roku and Smart TVs later in 2017.

www.simplestream.com

SIMPLYLIVE

ViBox All In One Production System

Innovative Touchscreen Interface to Drive the Next Generation of Users

The ViBox is a powerful integrated system packing the traditional production equipment into a small footprint delivering a cost-effective solution. As the consumer continues to watch content on a growing number of platforms, the demand for creating more media multiplies. Yet, the expectations for a high-quality production hasn't changed. The ViBox integrates the production switcher, audio mixer, graphics, replays, highlights and more into a 4RU server and add-on audio mixer. It has been designed to address the cost pressures of production with a lower investment cost on hardware but more importantly, there is a significant reduction in operating costs through its efficient, touchscreen driven user interface. This UI breaks with the traditional button panel approach to switching and the concept of "one task equals one machine equals one person."

The ViBox innovation starts with the core server, which is manufactured for reliability and performance. The ViBox chassis is designed with eight 3G SDI channels, combining CPU and GPU processing with 1 Gb/10Gb connectivity and full IP architecture. This commodity hardware is optimized to achieve the following:

- Record up to six or seven HD SDI cameras/feeds with 16 embedded audio channels
- Playback clean and dirty HD SDI program feeds while simultaneously recording them on RAID storage
- Digital audio mixer with 18 Analog audio inputs and eight Analog audio outputs
- Import graphics or use external live graphics integrated via NDI
- UI on 27-inch Touchscreen for one user with option to add a second touchscreen in a collaborative environment

The ViBox architecture has also been designed to tackle the transition to "at-home" productions. As the operational costs to send staff on-site continues to be a significant part of the budget, producing content back at the facility allows for less staff at the venue. It allows for additional budget savings with the ability to scaled-down the cost of the control room with less monitoring and hardware while also decreasing

the staff needed to operate the system.

This powerful ViBox server is driven by a pioneering, intuitive user interface that breaks with the norm, to embrace and drive the next generation of users. The user interface is designed to be fully controlled with an optimized 27-inch touchscreen. The visual nature of the interface makes the actions instinctive as you are selecting and manipulating that which you see on the screen.

The key attribute of the interface is the intuitive automation that al-



lows users the ability to create such high-level productions. User defined automation rules allow for context-based transitions (cut live cameras, trigger graphic replay wipes, use mix effects between replays, trigger graphic wipe back to live, etc.). This integrated level of design allows the user to concentrate on telling the story of the action while the built-in automation eases the burden of operation.

The capability of the ViBox was summarized in a recent case study by a high-profile broadcaster. The requirement to feed a substantial number of media channels with complementary events forced a new plan with a fixed budget constraint. The key was the broadcaster still expected their high standard of deliverables for the live coverage of these events. The previous staff for covering similar traditional six camera events was 29 people. Adopting the new workflow around the ViBox cut the staff down to 12. These types of numbers show the impact and value the ViBox solution can bring while delivering on the high-quality production expectations.

www.simplylive.tv



SONY ELECTRONICS

HDRC-4000 HDR Production Converter Unit

Achieves a 4K HDR and HD SDR Simultaneous Live Production Workflow

Sony's HDRC-4000 is an HDR (High Dynamic Range) production converter unit that bridges the gap to achieve a 4K HDR and HD SDR simultaneous live production workflow.

It provides simultaneous real-time streams for multipurpose 4K HDR and HD HDR live production as part of Sony's powerful SR Live for HDR workflow.

This efficient workflow enables simultaneous production of 4K HDR and HD SDR using the S-log curve to ensure the highest quality content from our cameras throughout the entire production process.

SR Live achieves live High Dynamic Range from camera to transmission, and can simultaneously produce 4K HDR and SDR. The HDRC-4000 converter enables Sony's HD cameras to also output 4K, HDR and SDR and offers real-time conversion of 4K HDR and HD HDR and a simultaneous output of 4K HDR, HD HDR, 4K SDR and HD SDR.

In the SR Live for HDR workflow, the camera's output signal is converted into S-Log3, BT.2020, HD HDR as an intermediate format for production processes.

Once the image has been produced,

Sony's HDRC-4000, HDR production converter unit is required to convert it to an appropriate HDR-capable transmission format, such as standardized HLG or PQ. The HDRC-4000 uses original algorithms, including built-in AIR (Artistic Intent Rendering) Matching, to accurately reproduce the image quality and coloring determined during S-Log3 production — regardless of the transmission format used.

The SR Live for HDR production environment is capable of delivering high-quality content since images are produced using the S-Log3 format and converted into desired broadcast and other distribution formats and expands Sony's HDR production ecosystem.

This streamlined workflow saves productions time and money and enables broadcasters to enjoy outstanding HDR image production as well as conventional 4K SDR and HD production.



www.sony.com/professional

SQUARE BOX SYSTEMS/CATDV

CatDV Worker 7 Media Workflow Automation

Now Cloud- and Enterprise-Friendly, With Brand New Graphical Configuration

Square Box Systems' CatDV Worker 7 is a next-generation workflow automation solution for the industry-leading CatDV media asset management (MAM) system. Now supporting Linux environments and easier deployment in organizations using OS X® and Windows platforms, Worker 7 includes a host of functions designed to make CatDV's workflow automation and integration more powerful and easier to use.

At the 2017 NAB Show, Square Box Systems highlighted the latest enhancements to Worker 7, including the ability to run as a service for enterprise-scale deployments and new tools for remote monitoring and transcoding support. Plus, Worker 7 now features a new workflow design tool that makes creating and managing worker tasks much easier and more intuitive.

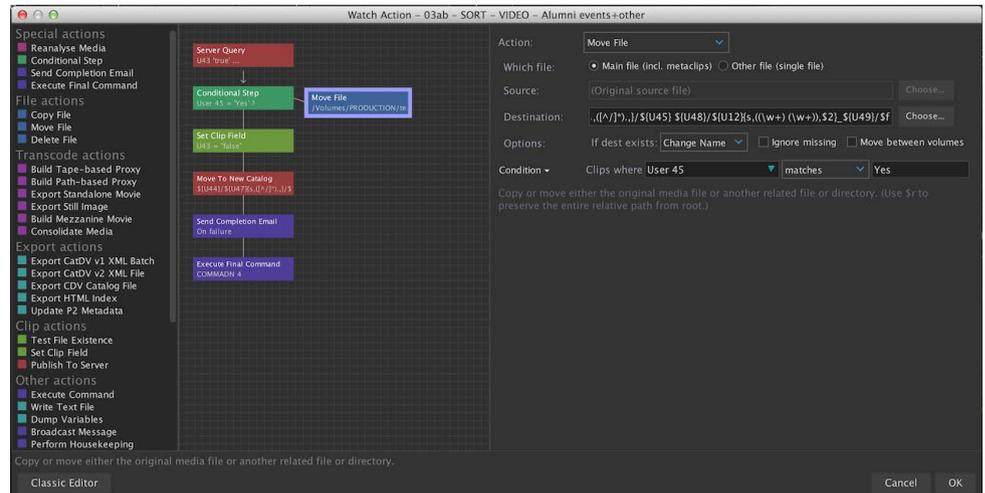
More than 1,300 commercial customers and thousands of individual users around the world have chosen CatDV to help them manage, organize, and access large volumes of digital media. Worker 7 makes CatDV a highly compelling option for large-scale enterprise users who need to manage huge volumes of assets in a true enterprise-scale solution. Worker 7 provides a powerful automation engine for these users to build customized workflows and automate file processing within CatDV. Suitable for on-premises, cloud, data center, or hybrid environments, Worker 7 saves operations time, money and stress by automating previously error-prone and costly processes.

Worker 7 is highly configurable, with the ability to automate functions such as content ingest, proxy creation, transcoding (including control of external transcoders), content movement and archiving, and file renaming. As such, Worker offers a powerful tool with which users can streamline a wide variety of media workflow logistics tasks.

Worker 7 includes a Linux version for enhanced support of cloud and virtualized deployments. In addition, the platform is able to run as a service on Mac® and Windows platforms, further streamlining managed IT environments. Worker 7 updates CatDV's already extensive capabilities with features such as the ability to verify file copies bit by bit (in addition

to calculating MD5 checksums), the ability to transcode mixed format sequences, and improved camera card support.

The latest version of Worker 7 includes features for easing CatDV's deployment in high-performance, cloud-based workflows, workflow design and configuration, and native transcoding and proxy generation from virtually every common media and camera format. Worker 7 is based



on CatDV's latest core engine, giving users access to improved metadata extraction and transcoding support. This means Worker 7 now supports native transcoding and proxy generation from almost all common media and camera formats, including XDCAM, P2, Avid, XAVC, XF, RED, AVCHD, DPX, ARRI, and others.

An all-new graphical workflow designer gives operators an "at-a-glance" visual overview of the processing steps in a workflow definition. By clicking and dragging options into the flowchart-style view, operators can manage the workflow more holistically and better understand the impact of each dependency. Other new Worker 7 enhancements include the ability to run as a background service that starts automatically when the computer starts up, rather than requiring a desktop login session, and a single, intuitive dashboard for operators to monitor multiple Worker 7 services running on different machines.

www.squarebox.com/product/worker/worker-7

STREANN MEDIA

Inside-Ad Video Monetization Platform

The New Protocol in Digital Advertising X10 Ad Revenue

Streann Media transformational software is a patented, new protocol in digital advertising called Inside-Ad. Inside-Ad improves brand engagement, brand recognition and is capable of increasing ad revenue X10. A true replacement

of traditional pre-roll advertising, the Inside-Ad technology will store, time and display the advertisement in a non-intrusive way. Inside-Ad is already integrated with +40 advertising engines. The Inside-Ad technology can insert the programmatic advertising and share 50 percent of the revenue or it can be used with local advertisement by creating



streann
capture • play • monetize

campaigns within the platform. A true evolution of traditional pre-roll. If you are a content creator, radio, TV, cable operator or OTT, and are investing in a digital media strategy, you need all the tools necessary to connect your brand to consumers. Inside-Ad is available

for both web and mobile (iOS and Android) with Big Data analytic per user and per channel. Streann's technology is leading the over-the-top next generation services. Streann's technology is being used globally in 141 countries and has deployed more than 150 OTT solutions with 911 live channels, 1468 VOD, 421 radio channels and growing.

www.streann.com

THE WEATHER CO.

Max Engage Weather App for News Stations

Produce Content for Any Screen Using Automation and the Power of IBM Watson

Max Engage with Watson is the first-ever cognitive mobile application for news stations. It automatically creates and distributes personalized weather and traffic content across digital platforms to increase viewer engagement and advertising revenue.

In today's 24-hour news cycle, consumers expect to get local, relevant content wherever, whenever and however they want. This year, The Weather Company is introducing major enhancements to its Max Engage mobile application, which will include the power of IBM Watson. The new upgrades to Max Engage will include several key features, including automated content generation personalized through geofencing technology, enhanced storytelling and interactive live-streaming.

Max Engage with Watson can improve the quality of the weather report by radically accelerating the manual, time-consuming process of curating a menu of relevant, timely subject matter to include across



digital properties. For instance, the new enhancements to Max Engage include:

- **Automated Content:** Using automated content generation, Max Engage with Watson uses relevant weather content it discovers to produce fun, animated silent videos. The video is then captioned with a unique forecast created by IBM Watson. Giving news stations the ability to create multiple videos based on varied audiences, several times a day without any human intervention, newscasters can save time and resources.
- **Geo-Fencing:** Max Engage with Watson will push relevant weather video forecasts through to mobile, social, and web at the same time. Each video will be truly personalized based on user location. Through geo-fencing technology, down to street level, users will receive a fresh video forecast based on the current forecast at that moment.
- **Enhanced Storytelling:** Max Engage with Watson increases audience engagement with the content itself as the IBM Watson technology serves relevant content to enhance storytelling, such as: weather history to current conditions and local facts of the day. It also has the potential to address lifestyle questions, such as “What should I wear today?” or “When is the best time to start gardening?”
- **Interactive Live Streaming:** Max Engage with Watson will allow broadcasters to live stream to Facebook or mobile directly from the Max interface. This new technology will allow the broadcaster to see the audience comments in real time while streaming. The newscaster will also have access to a word cloud including common words to narrow in on questions and keep the audience engaged.

Max Engage with Watson is a major breakthrough in the weather industry and will help broadcasters be far more effective in reaching audiences and driving a higher ROI from digital video by providing relevant, local information that truly matters to them.

business.weather.com/industry-solutions/media

THINKLOGICAL

New 4K@60 Private Cloud Editing Solution

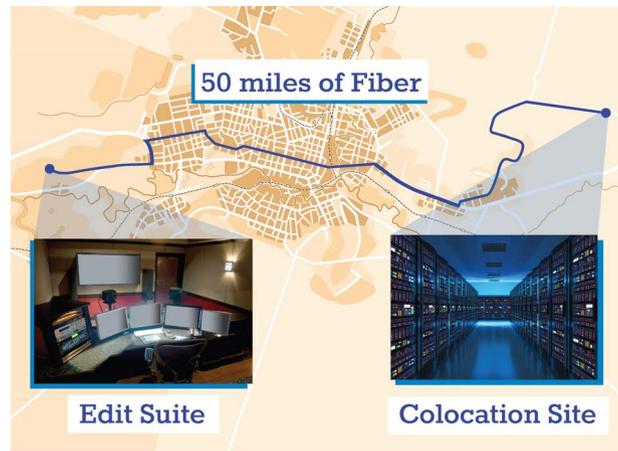
No-Latency System Simplifies Infrastructure, Lowers Operational Costs

Thinklogical introduced a new, uncompressed, zero-latency 4K private cloud editing solution for media and entertainment visual effects (VFX) and post-production applications at NAB Show 2017.

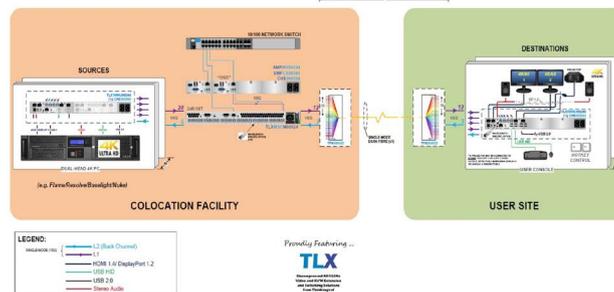
A growing trend in visual effects and post-production is “PC-over-IP” — extending and distributing video and computer I/O control over public networks using internet protocol (IP) technology. This has been the most common method to migrate workflows to the cloud, in hopes of saving time, money and equipment costs. PC-over-IP is typically achieved by streaming compressed screen images and KVM (keyboard, video, mouse) functions to the desktop. For certain applications, PC-over-IP delivering a compressed proxy screen image has been a practical, if less than optimal, choice.

At the same time, the media and entertainment industry is moving quickly to higher video resolutions, wider color gamuts, higher frame-rates, VR, and 360-degree formats. Image granularity and data payloads are expanding exponentially. When creating master-quality images in this new environment, viewing a proxy via a compressed IP cloud service can offer a sub-par post-production experience. If a creative professional is making the “digital negative” or working with 4K and HDR content, true pixel-for-pixel images and smooth I/O performance are key for accuracy, inspiration and productivity.

Thinklogical introduced an alternative approach to solve this challenge at NAB Show 2017. Thinklogical’s new, 100-percent uncompressed, non-IP private cloud solution provides smooth, zero-latency video, KVM and UI control, and supports 4K DCI 4:4:4 video sequences, at up to 60 frames-per-second. Thinklogical’s patented transmission technology can transport 10 of these uncompressed 4K signals — with zero-latency



M & E TRANSPLEX SOLUTION – COLO/USER SITE
4K@60Hz 4:4:4 30bit uncompressed full KVM



UI and I/O — over a single fiber. This performance is available at distance of up to 50 miles over fiber-optic cabling. A VFX or post facility in London, New York or Los Angeles, for example, can achieve on-premises quality system performance from any data center in their metro region. An uncompressed, full-resolution, zero-latency 4K-capable private cloud is now a viable and cost-effective choice for creative professionals.

With Thinklogical’s new private cloud solution, VFX and post houses can increase productive space and save on energy and maintenance costs by moving servers and IT infrastructure to a remote, managed co-location facility. The new cloud solution also supports MPAA content security best practices by separating and securing vulnerable video sources and stored content from easy access by end-users, protecting content from theft, hacking or intentional and accidental data breaches.

This powerful and highly-secure cloud solution is possible through Thinklogical’s innovative TLX and TRANSpIex tech-

nology. TLX is the first KVM system able to extend and switch uncompressed 4K DCI video at 4:4:4 chroma-subsampling, in 30-bits-per-pixel color-depth, at 60 Hz frame rate. TRANSpIex is an optical multiplexer and demultiplexer that uses CDWM or DWDM technology.

TRANSpIex transmits multiple data streams over fiber links via separate optical wavelengths. This enables greater data transmission payloads over existing fiber infrastructures, making master-quality, private cloud reliable, efficient and cost-effective.

Thinklogical is the first to offer the media and entertainment industry a secure, uncompressed, high performance private cloud option supporting full-resolution 4K and HDR video editing and image sequence workflows with pixel-for-pixel accuracy and zero latency.

VERIZON DIGITAL MEDIA SERVICES

Live Streaming Solution

An Industry-First, Single-Vendor Solution for Live Video Streaming at Scale

Launched prior to the IBC2016 show, the Live Streaming Solution from Verizon Digital Media Services is unique in that it employs one single workflow to prepare and deliver live streaming content to any device, anywhere. The solution makes it possible — even easy — for broadcasters, venues and event producers to stream live content at scale. In addition to empowering these content producers to prepare, deliver and monetize live event video more effectively, more economically and more often, it facilitates the immediate and ongoing viewer engagement that is critical to successful over-the-top (OTT) video services, whether live or on demand.

Streaming live events to large audiences, particularly at scale, can be complex and challenging. Traffic spikes can lead to outages. Storms can cancel events at the last minute. Competitions, performances and awards ceremonies can be unpredictable. The live video itself often must travel across expansive networks with inconsistent connectivity. Nevertheless, audiences expect to enjoy a seamless TV-like experience, delivered smoothly to any device, anywhere. To help content producers meet these expectations, the Live Streaming Solution addresses critical challenges — from ingest to playout — and provides all the tools and support essential to exceptional live streaming.

Upon receiving the source feed from the content producer, the Live Streaming Solution supplies a single live-stream URL that transitions seamlessly between pre-event, featuring a “starting soon” slate; live action; and a VOD asset, created immediately upon completion of the event, without the need for re-encoding. This workflow is so straightforward that content producers can manage this process themselves. The solution includes a full suite of self-service tools, including a cloud-based scheduler and straightforward operator dashboard that make it easy to provision encoders, manage live feeds, insert ad breaks and push slates into the Verizon Digital Media Services Uplynk Video Streaming service.

Alternatively, when the scale and importance of an event call for additional technical and operational support, Live Streaming Solution users have the option of outsourcing day-of-show operations to the Verizon Digital Media Services live events operations staff and remote master

control. Content producers enjoy further support through the continued expansion of Verizon Digital Media Services’ Edgecast Content Delivery Network, which supplies ever-greater global reach and ever-better service quality for online viewers worldwide. A growing global network of PoPs on five continents ensures that producers around the world can handle the massive viewership for large-scale, high-profile events.



Already trusted by leading media and entertainment brands to deliver high-profile live events, the Live Streaming Solution supports as many as 200 events daily and is capable of scaling up quickly to support millions of viewers just seconds after they join the live event. Throughout an event, real-time health monitoring makes it easy to keep an eye on the quality and availability of live streaming content. Failover support for the Uplynk Video Streaming service’s Slicer application, which encodes and packages content for streaming, runs on-site at the venue or at the point of origination to ensure continuity of service and the integrity of video streams. End-to-end intelligence and insights enable users to correlate viewing analytics with network performance.

Because Verizon Digital Media Services controls the end-to-end workflow, the entire streaming workflow can be monitored and maintained as one business unit. No other provider can quickly evaluate and assess the full delivery chain in this way. This model enables faster and more responsive troubleshooting, which in turn aids in maximizing uptime and ensuring the exceptional quality of experience that viewers demand.



www.verizondigitalmedia.com/solutions/live-streaming

WESTERN DIGITAL CORP.

ActiveScale X100 Cloud-Scale Storage

A Highly Scalable, Integrated Storage System That Scales up to 52 PB

As digital cinema replaces traditional workflows, film and video makers are looking for new ways to enhance their storytelling. The most notable technologies are 3D high frame rate (HFR) digital cinema and 4K capture. Both promise to thrill the audience with an experience closer to how humans see real life.

Digital capture today can occur on videotape, hard disk drive and flash memory devices, each with their advantages and disadvantages. Twenty-four frames per second (fps) has been the predominant frame rate because it has been the minimum rate that supports an optical sound track. This choice had nothing to do with image quality and everything to do with cost. The cinema industry is now ready to move beyond 24fps to new HFR and 3D HFR technology. The current state-of-the-art is 48fps and is rapidly transitioning to 60fps and 120fps.

The ActiveScale X100 System is a fully self-contained, scale-out object storage system that allows studio and post-production houses to support any resolution, including next-generation frame rates of 48fps, 60fps, and 120fps. Delivering 840 terabytes (TB) of raw data storage in a single rack and scales out to over 52 petabytes (PB) of raw storage, the Active Archive System is a ready out-of-the-box solution that helps data centers easily evolve from silo-ed data storage to cloud-scale active archiving. It also offers fully distributed erasure coding and has native support for Amazon S3.



Additionally, the ActiveScale System uses object storage software that ensures valuable research results are well-protected and always available, with a patented technology that delivers 15 nines of data durability. In a multi-geo implementation, data remains consistent and accessible during a full data center outage. Through drive-level background data integrity checking, the system automatically and transparently detects and corrects data degradation, eliminating the risks and media management activities associated with tape-based archives.

Object storage architecture makes an all-disk-based active archive system a compelling alternative to traditional hybrid cloud or tape-based solutions. It combines the benefits of cost-optimized tape storage with random data accessibility of disk-based storage and cloud-like scalability, manageability and resiliency without the expense and risk of subjecting data to a public cloud.

Object storage also supports data access anywhere, anytime, on any device, and it minimizes the number of storage tiers below primary storage. These tiers are consolidated into a single active archive tier for use as a backup target, as a long-term data archive, or as a staging area for data analysis—the latter being a distinct benefit compared to traditional tiered storage. Fewer tiers mean less complexity and cost, plus easier management.



www.hgst.com/products/systems/activescale-x100-system

ZACUTO

Control Grip System — Camera, Lens Control

Zoom, Iris, EVF and Camera Control at Your Fingertips

The Zacuto Control Grip System relocates camera, lens and EVF control to a comfortable, convenient handgrip, all controlled by a slim, powerful backpack. Designed to streamline shoulder mounted rigs. The Backpack and Control Grip can combine with Z-Motors and our electronic Z-Drive follow focus to create your ideal universal camera and lens control system.

The Control Grip System is the final piece of the Next Gen Recoil puzzle. We create our balanced Recoil rigs by moving the balance point directly over your shoulder. This enables you to carry the weight with your whole body, and is much more comfortable and stable for all day shooting. With the camera on your shoulder, we then relocate focus, monitoring and camera controls forward, creating a lighter and shorter rig.

The Recoil concept and Control Grip System is the ideal professional combination for shouldermounted operators. You now have complete control over all camera, lens and EVF functions from the convenience of your handgrips.

Compatible with Canon C Series, Sony FS5, FS100, FS7, FS700, RED, Arri and Canon DSLRs.

Backpack and Control Grip

With this dynamic duo, easily and comfortably control your camera and servo zoom lenses while working shoulder mounted. The powerful Backpack is the command center for the Control Grip, a walnut Aaton style handgrip, that controls your camera, Gratical EVF, servo zoom lenses and more. The slim Backpack mounts behind your camera keeping the center of gravity low to maintain balance.

The Control Grip System can also control the internal motors of servo zoom or cabrio ENG lenses like the Canon 18-80mm and 17-120mm

Z-Motor

Turn any zoom lens, like the Fujinon MK 18-55mm, into a servo zoom lens by adding a Z-Motor and motor cable to your Control Grip System. Gain complete iris control through the camera control LANC cable using EF lenses or use a second Z-Motor for cinema lenses.

Daisychain and power up to three Z-Motors to control zoom with a



traditional rocker switch, iris, and focus (with our electronic Z-Drive.) Now you can control every function of your camera and lens from your handgrips.

Electronic Z-Drive Follow Focus

Modeled after our popular mechanical Z-Drive and Tornado grip, this electronic version is designed with single-operator, shouldermounted rigs in mind. Via the Backpack, your Electronic Z-Drive controls a Z-Motor to smoothly and precisely pull focus. The Z-Drive can automatically or manually calibrate.

ACCEDO

Videa App Publishing Platform

Makes Publishing of Out-of-the-Box, Yet Customizable Apps Simple and Fast

Videa is a cloud-based Video App Publishing Platform that delivers native apps across multiple screens. It is an out-of-the-box solution, enabling an extremely fast time-to-market with feature enriched video apps. At the same time it is fully customizable. The content management system within Videa enables content providers to stay in control of all of their content across multiple devices and regions. Pre-integrations with third-party services make it easy to fit Videa into existing workflows.

The User Experience can be dynamically customized within Videa with dynamic theming, layouts and controls. These can be changed within the solution at any time to suit preferences, events and other factors.

Within the content management system, users can set automated workflows and processes to make app management all the more efficient. It also enables demo and test app configurations on the device in real time, helping content providers to test the perfect user experience for the audience.

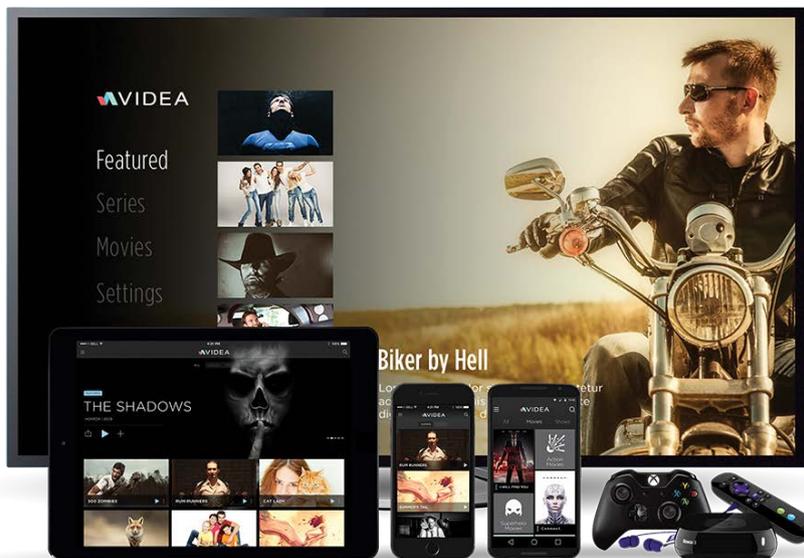
Videa simplifies the process of deploying apps on additional platforms while not compromising on qual-

ity with a “native” approach of building apps. Being an out-of-the-box solution means it has a set list price for each supported platform, making purchasing extremely transparent. Yet at the same time it is based on years of experience delivering engaging and compelling VOD services, therefore it comes packed with all the right features needed to deliver an OTT / VOD service. It leverages native code and device features and can be deployed in weeks. At the same it has full OTT/TVE app features including VOD and live with DRM, ad server, analytics, and authentication.

Giving the content providers control over testing and building the perfect User Experience, based on the foundation of a solid app platform, makes it unique. At the same time, however this can be done bespoke by Accedo, giving users full flexibility.

Unlike most other solutions, it is pre-integrated with all major third-party video infrastructure services, meaning it can fit easily into existing workflows.

Videa is available and being used by customers including ABC, Raycome Media, QVC, among others.



www.accedo.tv/vidya

ANVATO (NOW PART OF GOOGLE CLOUD)

Media Content Platform (MCP)

The Complete OTT/TV Everywhere Platform From Signal to All Screens

MCP is the only turnkey solution for media companies and programmers who need to fully automate the video publishing workflow from live video capture, live editing and publishing on multiple platforms to securely syndicating to multiple business partners.

Anvato joined Google Cloud in July 2016 and also rolled out support for 360° video. Early in 2017, Anvato migrated its services onto Google Cloud Platform (GCP) infrastructure.

Now GCP offers a fully managed, end-to-end video processing and management platform for signal acquisition, live and video-on-demand editing, hybrid encoding, social and premium syndication, dynamic ad insertion, authenticated playback, video analytics and player SDKs across all connected devices. The products cover a broad range of cutting-edge video processing solutions for

pay TV operators, programmers, broadcasters and live event producers, and GCP is now the preferred option for Anvato customers of the likes of NBCUniversal, Univision, Scripps Networks Interactive, Media General and others – for OTT and cloud-based video processing and delivery.

The launch on GCP provides Anvato customers with new storage and delivery options, access to GCP's global network of data centers, as well as access to innovation at all levels — hardware, software and operations.

Machine learning, automation and additional scale are some of the areas the team is focusing on.

Anvato's MCP, Zync Rendering, Google Cloud's machine learning, networking, storage and compute capabilities, and more from Google were showcased at the 2017 NAB Show.



www.anvato.com

ASPERA, AN IBM CO.

Aspera Files SaaS

A Multi-Cloud SaaS Platform for Media Collaboration, Transfer and Streaming

Aspera Files is a breakthrough SaaS platform for high-speed media collaboration including large file transfer, sharing and now live streaming from any public cloud or on-premise storage. Fully managed by Aspera, Files allows organizations to instantly onboard and start sharing media from any environment via a “single pane.”

Files uses Aspera’s FASP® technology to overcome the fundamental size, speed and distance limitations of traditional transfer and streaming technologies. FASP provides distance independent transfer speed (regardless of network round-trip delay and packet loss), and predictable live streaming over commodity internet WANs.

Transfers are direct with all public and private cloud object storage, and have no content size limits.

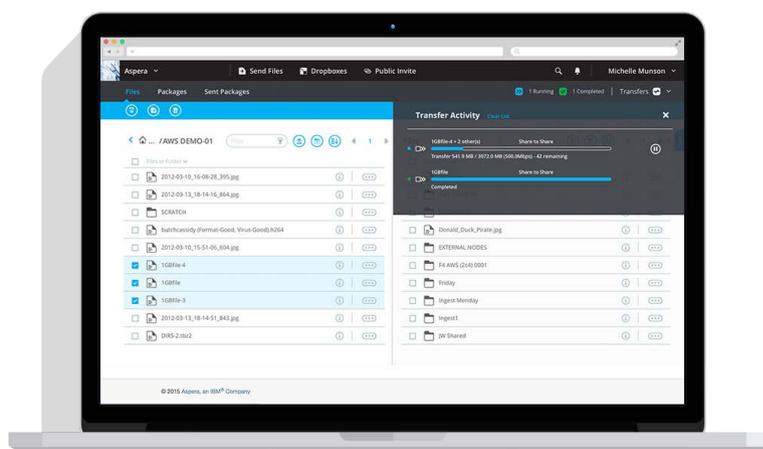
As a result, Files offers breakthrough capabilities for distributed media management:

- No Size Limits — Move any size or number of files and data sets
- Maximum Speed — Send reliably at maximum available bandwidth over global WANs and ingest live video without glitches or delays
- Support for Any Storage — Open to any infrastructure combination of on-premises and in the cloud for direct access and high-speed transfer
- Powerful Security — Comprehensive built-in security including fine-grained user access control, collaboration settings and encryption on the wire and at rest
- Automatically Scales — Built-in elastic scaling supports variable transfer throughput and storage
- Instantly Available — New organizations onboard instantly with private, branded project-based sharing

First launched in 2016, Files now introduces dramatic expansion through a new Streaming Service option, and the following new capabilities:

- Files Streaming Service allows Aspera nodes to ingest live video streams through Files and distribute streams to browser clients via a lightweight plugin. Based on the FASPstream technology, which transmits live broadcast-quality video over internet without glitches, the new architecture can transport any HTTP/TCP or UDP video stream between media sources and clients with high quality and without modifying the media workflow.
 - New Aspera Drive and Mobile Apps for iOS/Android extend collaboration possibilities for desktop and mobile users. Aspera Drive provides in-desktop

Files access for remote transfer, sync and package exchange on Windows and OS X. New Check-in/Check-out options allow users to download a local copy of files to make changes exclusively and check-in to replace the master version. New remote Share-to-Share transfers allow users to move content between global storage in the desktop, and a new OS X finder mount seamlessly opens remote files and saves local files for check-in to the infrastructure.



- New Files Express Mode is an ultra simple interface for sending and requesting large files and folders, activated with a simple toggle from full Files mode. Users can drag and drop to send packages with per-package expiration and encryption, and invite others to send to them with one-click personalized invitations. A convenient retractable side bar allows users to preview incoming packages and download contents, forward previously sent packages, and review, modify and resend invitations.
- Seamless integration with the new Aspera Transfer Service, a hosted, multi-cloud transfer service that enables secure high-speed transfer of large files and data sets across cloud infrastructure. Customers can instantly add ATS subscriptions directly to their Files organization to securely share their cloud storage on AWS, IBM Cloud, Azure and Google Cloud (coming soon).
- New Subscription options with pure pay-as-you-go and volume commitment options ideal for the smallest startup or the largest enterprise.
- Self-service Trial and Purchase available directly from the Aspera Online Store.
- Many features enhancements (more than 30) around Collaboration, Security, Storage and Transfer Management, File Management and User and Workspace Management.

www.asperasoft.com



ASPERA, AN IBM CO.

Aspera Transfer Service

Multi-Cloud Multi-Tenant Service for Transferring and Streaming Information

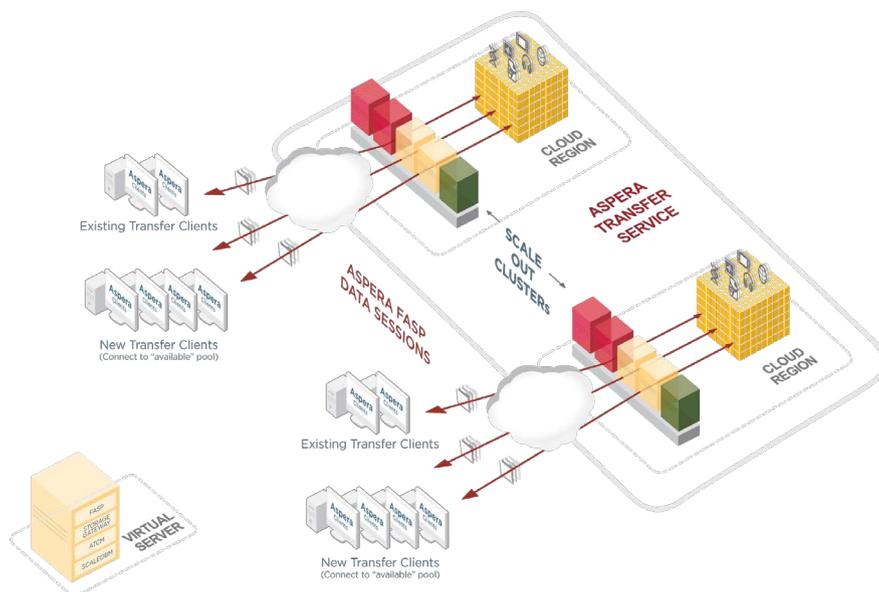
Aspera Transfer Service (ATS) is a hosted multi-tenant software service running in the cloud that enables high-speed upload and download of large files and data sets directly into cloud object storage. Using the patented Aspera FASP® high-speed transfer protocol, customers can quickly and predictably move data of any size over any distance at line speed.

Aspera has wrapped its reliable, secure, ultra-fast transfer software into a service that is hosted and managed by Aspera's team of experts in a high-availability environment. Subscribers to the service benefit from Aspera's direct-to-cloud transfer technology that writes data directly to object storage during the transfer so that the information is immediately available upon completion of the transmission. ATS transfers are protected by enterprise-grade security, which authenticates and authorizes transfer clients. All data is sent over an encrypted wire and the files are encrypted when at rest. The platform performs data integrity verification for each transmitted block, and will automatically retry from point of interruption on failure. Its management interfaces provide precise control over the transfer network, allowing users to pause, resume and report upon transmission operations.

By subscribing to ATS, customers can gain access to their cloud storage in a matter of minutes. The product provides out-of-the-box support for all AWS and IBM Bluemix infrastructure regions and data centers. Early access is available for Azure and support for Google Cloud Storage is coming soon. The Aspera technology platform also ties in directly to advanced cloud storage features such as S3, IBM Cloud Object Storage, Infrequent Access, Reduced Redundancy, KMS (Server side key) and Cool Storage.

ATS is ideal for high-speed, large-volume, secure content ingest directly to and from cloud storage. Using Aspera products or an Aspera API, users can transfer and synchronize files at maximum speed directly to scale-out cloud object storage. Unlike TCP-based transfers, Aspera performance is independent of network round-trip delay and packet loss. Data can be transmitted 10 to 100 times faster, limited only by the platform I/O. Adaptive bandwidth control automatically adjusts the transmission speed to match available network bandwidth and available I/O throughput, ensuring transfer speeds are highly predictable and scale linearly with increases in bandwidth.

Seamlessly scaling, without any action required by the customer, the service can support many thousands of concurrent sessions running in



parallel. This functionality speeds the transfer of directories containing very large numbers of very small files, as well as transfers of extremely large files and directories.

ATS fits into any deployment environment (on premise, cloud, hybrid). Customers can gain instant access to cloud storage by leveraging the service's interoperability with core Aspera products. The service supports all modes of data transfer (command line, interactive GUI point-and-click, browser, APIs, hot folder automation, one-way sync and bidirectional sync), and can be managed from the Aspera Files, Shares and Faspex web applications, whether they are hosted on premises or in the cloud.

Customers choose between two payment models when subscribing to the Aspera Transfer Service. The pay-as-you-go option charges for the data transferred during the month. An annual pre-commit subscription offers discounted rates on transfers that can scale up to multiple petabytes per year.

ATS solves a wide variety of cloud storage challenges:

- Rapidly migrate very large files and data sets to, from and across clouds
- Connect Aspera Files and Aspera applications to existing cloud storage with scale out transfer capacity and high availability
- Embed ATS into existing cloud applications for fast, easy, high speed transfer and management of cloud data.

asperasoft.com/cloud/aspera-transfer-service

CLEAR-COM

Trilogy Mentor RG

Most sophisticated, flexible, and reliable Sync and Test Pulse Generator

The Mentor Master Reference Generator (RG) by Trilogy is the most sophisticated, flexible, and reliable Sync and Test pulse generator (SPG) available on the market. Its design is built on several generations of proven Sync and Test generators by Trilogy Communications, a subsidiary of Clear-Com.

The Mentor would typically be installed as the master reference generator in a TV station or an OB truck. It generates synchronized video, audio and timecode for broadcast purposes to an extremely accurate time signature which is often provided by a GPS reference system, which is then passed on to the “mission critical” automation system. The single box solution ensures absolute synchronization of multiple signals in any Broadcast or pro media application.

Since accurate reference signals are crucial to successful operations, two Mentors and a changeover are often used to give the ultimate in redundancy.

The most interesting aspect of the Mentor is that all SD and HD reference and test signals are generated simultaneously for both 525 and 625 standards with independent timing control for all outputs to meet the most demanding requirements. The Mentor pays special attention to multiple audio generators assignable for: AES audio including Dolby E, DARS; Embedded audio in the SD/HD channels; Wordclock; and Analog

stereo audio.

Mentor RG offers three key features: two on-board Tri-Level Sync outputs for all 720 and 1080 standards. Tri-level sync is the analogue video sync pulse that is typically used for the locking of HD video signals and preferred in HD environments over black and burst. Mentor has also gained the ability to lock to external LTC time code or external Tri Level Sync, widening the scope of reference signals that can be used to “discipline” the updated internal oscillator which is now five times more



stable. In an IP-based TV station, the Precision Time Protocol (PTP) brings a complete peace of mind solution to synchronizing time over Ethernet.

Moreover, Mentor RG provides redundancy options to ensure uptime of the system. There is a selection of options to upgrade and customize as needed.

Aside from the sophisticated capabilities, the Mentor RG is simple, easy to use and incredibly robust.

For complete accuracy and reliability, Mentor RG is the ideal Sync and Test pulse generator for broadcasters.

www.clearcom.com

ELEMENTAL TECHNOLOGIES

AWS Elemental 4K Video Services

Live Streaming 4K Video From Space With NASA, NAB and AWS Elemental

Amazon Web Services, in collaboration with the National Association of Broadcasters (NAB) and NASA, produced a Super Session during the 2017 NAB Show. On April 26, this event included the first-ever live 4K video streamed from space, made possible by NASA with Amazon Web Services technology. The live feed from 250 miles above Earth was encoded and delivered by AWS Elemental software on board the International Space Station and on the ground at Johnson Space Center. AWS Elemental also delivered a live stream of the event via a workflow that included AWS CloudWatch, Amazon Route 53 and Amazon CloudFront for public access in both 4K and HD.

This event showcased how Amazon Web Services can help developers support 4K live video end-to-end from encoding to delivery on multiscreen devices at scale.

It is also illustrative of how AWS is helping NASA enhance its ability to observe, uncover and adapt new knowledge of orbital and deep space.

AWS Elemental Live encoding was seamlessly integrated into a real-time 4K HEVC workflow anchored by a 4K camera on board the ISS. Video was set up, controlled and managed over an IP network from a single, user-friendly AWS Elemental user interface. The AWS Elemental Live system encoded content in HEVC and sent it in a UDP transport system (UDP/TS) over the ISS network to Johnson Space Center in Houston along with a separate HD audio stream. The AWS Elemental unit on the ISS featured a small form factor encoder to accommodate space constraints; heat capacity and exothermic release within structural tolerances and zero-gravity space; and reduced power consumption for long-term remote deployment.

The 4K video signal was decoded at Johnson Space Center and combined with the audio signal to produce a 4K video/audio stream. This input was routed to two AWS Elemental Live encoders, which transcoded two HEVC video outputs for distribution; a primary signal to be distributed via satellite and a second, redundant signal for delivery by IP network directly to the Las Vegas Convention Center (LVCC).

Two fiber feeds delivered the disparate streams to individual decoders. The output of each decoder provided an input into the live switcher and provided an output for video confidence monitoring. Having both feeds delivered hot into the live production switcher provided the ability to switch “on the fly” between the unique video paths at the video director level.

Lastly, the feed was delivered to *live.aws-events.com/nasalive4k* from the LVCC. The live production switcher fed an SDI DA, which allowed the input signals to be replicated to two onsite AWS Elemental Live encoders. The two AWS Elemental encoders provided redundant transcoded multi-bitrate outputs for IP delivery to an AWS Elemental Delta video delivery packager. Two instances of AWS Elemental Delta provided redundant packaging of HLS outputs

for IP delivery. Amazon Route 53 provided DNS, redundancy and routing policies (for failover) to manage the flow of traffic. Amazon CloudFront provided the global content delivery network of the live stream and Amazon CloudWatch provided monitoring of the streams.

By streaming real-time video that captures images four times the resolution of current HD technology, Amazon Web Services is enhancing NASA’s ability to observe, uncover and adapt new knowledge of orbital and deep space.



www.elementaltechnologies.com

FLANDERS SCIENTIFIC INC.

DM170 Color Critical Production Monitor

Advanced Features Minimize Additional On-Set Equipment Needs

The durable, lightweight, and power-efficient Flanders Scientific DM170 has been purpose built for production applications where a color critical compact monitor is required.

The DM170 utilizes a native HD 10 bit LCD panel with a wide color gamut covering 100 percent of the DCI P3 color space and features an outstanding real-world contrast ratio of 1500:1. The DM170 features 12 bit 3 Gbps SDI inputs and is equipped with Flanders Scientific's advanced third generation color fidelity engine which supports both 3D calibration and 3D DIT/Look LUTs.

At 16.5 inches the DM170 is the most compact monitor in Flanders Scientific's flagship DM series and is equipped with the same advanced features and capabilities. Industry leading fast mode processing, Real-Time Scopes with HDR waveform, HDR preview modes, a strong all-metal chassis, and direct integration with today's most powerful color management tools make the DM170 a production environment workhorse for applications where color really matters.

The DM170 features 18 different scopes and meters, an adjustable exposure check tool, advanced pixel level measurement capabilities, live side-by-side monitoring, the ability to upload and store up to 16 3D DIT LUTs, a video data analyzer, loudness meter, and CIE scope. Additional capabilities include anamorphic de-squeeze functionality for 1.3x, 2.0x, 1.3xMag and 2.0xMag de-squeeze ratios, a variety of zoom modes, pixel mapping for non-native HD signals, markers, timecode, focus assist and log monitoring modes.

The DM170 can also utilize Flanders Scientific's IP Remote Utility and ScopeStream applications for Windows or Macintosh computers.

The IP Remote Utility allows for IP remote control of the connected monitor as well as full resolution frame grab and recall.

With ScopeStream, the DM170 transmits real-time waveform or vector scope data over IP so that they can be viewed on a connected computer leaving the reference monitor's screen unimpeded.



The DM170 also offers direct integration with on-set color management solutions like Pomfort's LiveGradePro, Filmlight's Prelight, Firefly Cinema's Fireplay and QTAKE's Grade module allowing for on-set color grading without the need for a standalone LUT box.

The monitor features dedicated second screen outputs for distributing manipulated images to downstream equipment, a true Zero-Delay processing mode, and signal cross-conversion making the DM170 the most state-of-the-art 17-inch production monitor in the industry.

flandersscientific.com/DM170

G-TECHNOLOGY

G-SPEED Shuttle XL ev Series Bay Adapter

Supports Multi-Stream Workloads With Colossal Capacity and High Performance

The G-SPEED Shuttle XL with ev Series Bay Adapters is designed with two ev Series bay adapters for use with ev Series drive modules and ev Series readers.

As a transportable eight-bay hardware RAID solution with Thunderbolt™ 3 technology to optimize performance, this solution offers content creators colossal storage capacity and high-powered performance. This external drive supports multi-stream HD, 2K, 4K, 8K, and VR workflows, RAID 0, 1, 5, 6 and 10 configurations, and provides transfer rates up to 1500 MBps.

It comes equipped with enterprise-class hard drives for enhanced reliability and a trusted five year limited warranty. As the needs of creative professionals continue to grow and they continue to seek out fast, reliable and easy to use solutions, the G-SPEED™ Shuttle XL with Thunderbolt 3 is the ultimate storage solution for demanding video workflows on location and in the studio.



www.g-technology.com/products

HAIVISION

Makito X HEVC Encoder/Decoder Series

End-to-End High-Quality, Live Video Using up to 50% Less Bandwidth

The Makito X HEVC series of video encoders/decoders provides end-to-end transport of secure, high quality, live HEVC/H.265 and AVC/H.264 video over any network at extremely low bit-rates. With the Makito X HEVC series, you can reduce bandwidth requirements by up to 50 percent, while maintaining video quality when compared to H.264 workflows.

Built on the award-winning features and low latency capabilities of the Makito X platform, the Makito X HEVC series is the ideal solution for broadcasters for live, interactive and bandwidth constrained backhaul and distribution applications.

The Makito X HEVC offers unparalleled performance compared to other HEVC encoders and decoders. The latest features in the Makito X HEVC series enable companies to:

- Reduce bandwidth requirements by up to 50 percent, while maintaining video quality when compared to H.264 workflows.
- Support both H.264 and HEVC workflows with six dedicated encoding engines.
- Maximize space with the compact, lightweight appliance and the highly efficient hardware architecture.

The Makito X HEVC is excellent for space constrained applications or in remote contribution workflows.

- Reduce Operating Expenses (OPEX) in broadcast workflows by reducing bandwidth requirements. Further OPEX savings are possible by leveraging SRT protocol to transmit video streams over less expensive connections such as the public internet.



www.haivision.com/products/video-encoder-hevc-makito-x

LEYARD AND PLANAR, A LEYARD CO.

Leyard LED MultiTouch

First Seamless LED Touch Video Wall

The new Leyard® LED MultiTouch is the industry's first seamless LED touch-enabled video wall, providing a seamless, smooth light-weight durable touch surface that delivers superior performance enabled by patent-pending Leyard® PLTS™ (Pliable LED Touch Surface™) technology.

The breakthrough Leyard LED MultiTouch brings advanced interactivity to fine pitch LED video walls, opening up LED display technology to a wide range of collaborative applications that until now were the sole domain of LCD displays. From broadcast to corporate settings to education institutions, Leyard LED MultiTouch offers a seamless touch experience for LED video walls up to 196" diagonal with high resolution 1.2 millimeter pixel pitch.

Benefits of the Leyard LED MultiTouch include:

- High-performance touch: The Leyard LED MultiTouch allows for up to 32 simultaneous touch points, enabling multiple users to simultaneously interact with the video wall without affecting other users. The touch experience is accurate and intuitive, with excellent tactile feel and a smooth, anti-static surface.
- Superior image quality: Unlike glass panels, which can trap heat and reflect light, the Leyard LED MultiTouch features proprietary Leyard PLTS technology for an anti-glare surface that eliminates the distracting reflections that can occur in well-lit environments. The display delivers a crisp, high contrast image using the highest quality black LEDs and maintains uniform color and brightness, even when viewed off-axis.

- Durable and easy to service: The Leyard PLTS touch surface material is extremely durable, protecting the video wall from damage that can occur from casual contact or debris getting on the display, while avoiding the heat that is commonly trapped in protective glass installations. The lightweight touch surface can easily be removed and then reapplied, making it easy to service. It is also straightforward to clean, requiring only a simple cleaner and cloth.
- Fits almost any environment: The Leyard LED MultiTouch is light-weight, thin and unobtrusive, making it ideal for almost any environment since it does not dramatically affect the mounting depth of the video wall.



www.leyard.com/LEDMultiTouch

NPAW (NICE PEOPLE AT WORK)

YOUBORA Infinity: Holistic Video BI Platform

All-in-One Business Intelligence Platform for Online Video

YOUBORA Infinity is the most advanced and holistic video analytics and Business Intelligence (BI) solution for broadcasters, OTTs, telcos and media companies to help them make data-driven, business, operational and technical decisions. By using metrics of audience, quality and engagement data from every internet-connected screen, YOUBORA turns data into descriptive and predictive actionable insights to drive performance and maximize revenue.

In order to get the full picture as of why YOUBORA Infinity is so disruptive and unique; it is imperative to acknowledge how early versions of YOUBORA helped customers.

In 2016 we launched YOUBORA 2.0, which expands upon the legacy of our original YOUBORA (monitoring QoS/QoE), allowing the online video industry to have real time, deeper and detailed information on their audience behavior and how their platform performs.

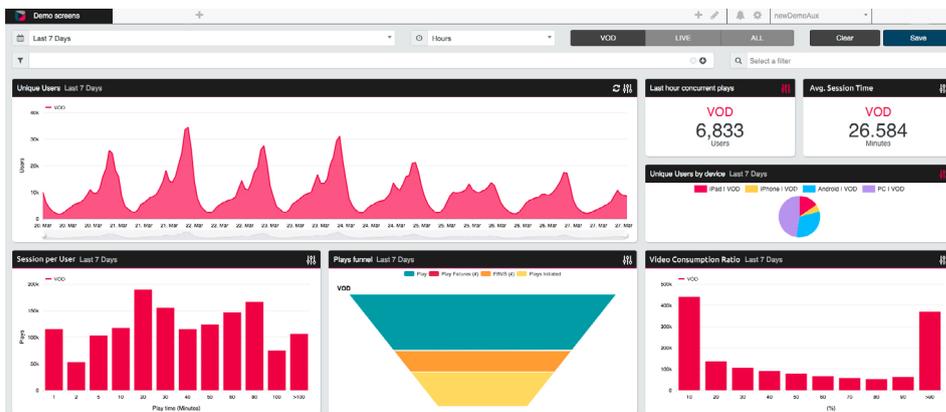
Now in 2017, we broaden the scope with YOUBORA Infinity, a first-in-class, end-to-end complete suite of integrated video analytics and BI that will provide insights based both on platform sessions (i.e. web, app, set-top-box) and video playback monitorization all in one platform - unlike any other player in the market.

Our state of the art platform uses cutting edge technology to give you a clear birds-eye view on data generated before, during and after the video playback. By gathering data in and out of the video playback we enable customers to better understand their audience behavior also between video playbacks - for example, time between sessions and video views; time spent on content selection; consumption trends; exits without video consumption; where users come from being able to filter audience by referrals; etc...

This way, our customers can have a full picture of the user experience and how their integral video service performs, therefore make decisions at multiple levels towards building stronger user engagement and ad optimization. Some examples of YOUBORA Infinity insights applications are: A/B testing, content recommendation algorithms and display on the site; defining content strategy in terms of production, acquisition or partnership; or selecting the most suitable position and length of content

and ads to ensure higher levels of consumption and retention.

YOUBORA Infinity tackles issues and challenges online video service providers may face regardless of their monetization model. In summary, the soon-to-be released platform introduces metrics that cover the largest range of insights in the market, from QoE/QoS, user behavior



and content monitorization (YOUBORA 1.0 and 2.0) and expanding to those same parameters applied to the full video service (starting at login, measuring the playback until logout). The scope has grown immensely since our first YOUBORA release resulting in an extended and improved product offering that assists many more departments within a company beyond technical teams, such as operations and customer service, marketing, content and management.

Overall, YOUBORA Infinity users have actionable insights to reduce churn and proactively manage users, increase ad and content efficiency, as well as to understand recurrent issues and their causes. Thanks to benchmark, KPI's users will be able to determine if they are performing at industry levels.

YOUBORA Infinity is the go-to BI solution all managers across the company will look at prior to making decisions to ensure business growth and engagement. YOUBORA Infinity is here to disrupt the standard for video analytics defining a new generation of holistic BI as it is the first holistic all in one BI platform for online video.

OWC DIGITAL

Thunderbolt 3 Dock Expansion Solution

Thirteen Ports of Thunderbolt 3 Speed, Connectivity for Laptops and More

The OWC Thunderbolt 3 Dock features Thunderbolt 3, USB 3.1 Gen 1, FireWire 800, Ethernet, mini Display Port, SD Card Reader, Combo Mic & Headphone Port, and Digital Audio, all an elegant industrial design.

With the 13 ports you need, OWC's new Thunderbolt 3 Dock brings unbelievable connectivity to your laptop through an included Thunderbolt 3 cable and delivers charging power to your laptop and other devices, all at the fastest speeds possible. For anyone concerned with the limited port options on new Thunderbolt 3-equipped Macs or PCs, the Thunderbolt 3 Dock is the ideal solution for connecting a wide variety of existing and future devices including external hard drives, webcams, audio interfaces, Ultra HD displays, wired networks and more. Because Thunderbolt 3 delivers phenomenal bandwidth, up to 40 Gbps, the Thunderbolt 3 Dock can be the foundation of a perfect custom display setup, with the ability to drive the latest generation 5K displays. It can also drive two ultra HD 4K displays or a combination of 4K, HD and other displays with the mini DisplayPort and additional Thunderbolt 3 port.

In addition, the Thunderbolt 3 Dock can connect and charge up to six USB devices, work with legacy FireWire storage, enable pristine audio, support wired networks and read SD cards, all at twice the speed of Thunderbolt 2 and all through a single cable. The possibilities are endless.

Ports include:

- SD Card Reader Copy photos and movies from your media card directly
- Expanded Analog Audio In/Out Connect external speakers and microphones
- 5 x USB 3.1 Gen 1 Delivering 5Gb/s data speeds as well as high power to your devices
- S/PDIF Pro Grade digital audio output Pro-grade digital audio output or signal transfers
- FireWire 800 Connect your legacy devices to your new workflow hub
- Gigabit Ethernet connection Connect to secure, reliable, high-speed wired networks
- 2 x Thunderbolt 3 Ports The fastest, most versatile connection available, up to 40 Gbps
- mini Display Port — Configure your perfect display layout

The OWC Thunderbolt 3 Dock includes a two-year OWC Limited Warranty MSRP: \$299.00



www.owcdigital.com/products/thunderbolt-3-dock

PANASAS

ActiveStor NAS With DirectFlow for Mac

DirectFlow for Mac Lets You Focus on the Craft, Not the Storage

ActiveStor with DirectFlow for Mac is the first and only high-performance combination of scale-out NAS with a parallel data protocol for the Apple Mac platform and the macOS® operating system. The solution offers several advantages over traditional post production storage platforms. It deftly handles the challenge of many simultaneous users working in both large unstructured and mixed large- and small-file media workflows, for faster media ingest, process and delivery of HD and 4K UHD resolution projects. The solution's ability to scale bandwidth and capacity for larger high dynamic range (HDR) and virtual reality (VR) projects helps future proof the system as new media formats and more complex workloads are introduced. ActiveStor with DirectFlow for Mac unifies all Macs on simple, high-speed Ethernet under a single global namespace to simplify system management, reduce TCO and drive productivity.

Already implemented by post-production and animation facilities as well as major broadcasters, Panasas customers have deployed ActiveStor to re-render entire movies in record time, replace outdated scale-up archive infrastructure, and significantly accelerate production workflows.

How It Works — DirectFlow avoids traditional protocol I/O bottlenecks by allowing compute clients to access the entire Panasas ActiveStor directly and in parallel. This results in higher balanced performance than what can be achieved with industry standard protocols such as NFS and SMB, avoiding the load-balancing and congestion side-effects of these protocols.

How It's Implemented — DirectFlow is a file system driver that runs inside each compute client. DirectFlow establishes a parallel I/O relationship from the client to the ActiveStor PanFS® storage operating system for every file read/write. DirectFlow also performs client-side parity calculations for data written to Panasas storage, relieving this burden from storage and unleashing greater performance benefits.

Why It's Perfect for Content Creation — DirectFlow for Mac builds on the success of DirectFlow for Linux by extending the performance benefits of parallel I/O over Ethernet to the Apple Mac platform and macOS operating system. Apple users requiring performance have been traditionally limited to complex SAN topologies that deploy well but scale poorly and restrict open access to data. With the introduction of DirectFlow for Mac, the ecosystem of macOS appli-

cations can tap the parallel performance advantage of DirectFlow over Ethernet for the first time, leaving SAN behind and leveraging Ethernet's economic benefits and infrastructure simplicity while also maintaining open access.

Why It's the Perfect Solution for the Storage User — When you double the performance of client applications accessing scale-out NAS you double the productivity of all users. This leads to higher quality outcomes because you have more time to perfect the product you are creating while also simplifying the cost of getting the job done. DirectFlow for Mac delivers breakthrough performance to all commercial markets serviced by the Apple Mac platform, including media and entertainment as well as life sciences and education markets.



Unlike competing post production storage solutions for large creative work teams that are fast but difficult to manage and scale, ActiveStor with DirectFlow for Mac is purpose-built to deliver a fast, high-performance experience handling modern-day media and entertainment workflows within an easily managed storage environment. A single administrator can easily manage dozens to hundreds of terabytes of ActiveStor storage to start, and it stays just as easy when scaling the ActiveStor solution to petabytes of storage capacity.

From visual effects rendering, to post editing, to active archiving, ActiveStor with DirectFlow for Mac delivers the performance advantage that allows editors to focus on their craft and not the storage.

www.panasas.com/DirectFlowforMac



ROSS VIDEO

Carbonite Black Plus 12G Switcher

The Frame Adds 12G Single Link to Every Fourth Input or Output

Like standard Black Plus frames, the Carbonite Black Plus 12G Frame features 36 x 22 I/O, all of which accept SD/HD/3G, and 3G Quad signals. The crucial difference is that Carbonite Black Plus 12G adds a 12G single link to every fourth input or output, providing total flexibility for signal format mixing and matching.

Carbonite UHD is the latest Carbonite software version that transforms Carbonite Black Plus 12G, as well as other Carbonite Black frames into a powerful UHD switcher. The Carbonite Black Plus 12G supports nine UHD inputs — 12G SDI or Quad 2SI 3G, and five UHD outputs — three 12G or Quad 2SI along with two Quad 2SI only.

Carbonite UHD utilizes 2SI UHD sampling, so when using a standard Carbonite Black frame UHD inputs and outputs need to be in 2SI format and not Square Division Quad. However, Carbonite Black Plus 12G and Carbonite Black Plus features input and output conversion to convert between

square division and 2SI - as well as up and down conversion to HD formats.

A complete 'ground-up' new design for UHD, this software version is not merely bus-linking and mapping of 3G — but enabling a fully UHD production switcher. With this, the Carbonite Black 12G becomes a complete 1 ME UHD switcher with four full keyers including a UHD chroma keyer and a transition key for Media wipes and DVE moves. Also included, are two channels of UHD DVE as well as two MiniME's — each with two full keyers and next transition preview. Naturally, Carbonite UHD features full UHD media stores which can playback UHD Key and Fill animations. There is also four HD MultiViewer Outputs, one System and three I/O based.

This is an unrivalled step forward in switcher design, it simply isn't possible to find another product at the Carbonite Black Plus 12G price point that offers this level of UHD performance.



SIMPLYLIVE

ViBox All In One Production System

Innovative Touchscreen Interface to Drive the Next Generation of Users

The ViBox is a powerful integrated system packing the traditional production equipment into a small footprint delivering a cost-effective solution. As the consumer continues to watch content on a growing number of platforms, the demand for creating more media multiplies. Yet, the expectations for a high-quality production hasn't changed. The ViBox integrates the production switcher, audio mixer, graphics, replays, highlights and more into a 4RU server and add-on audio mixer. It has been designed to address the cost pressures of production with a lower investment cost on hardware but more importantly, there is a significant reduction in operating costs through its efficient, touchscreen driven user interface. This UI breaks with the traditional button panel approach to switching and the concept of "one task equals one machine equals one person."

The ViBox innovation starts with the core server, which is manufactured for reliability and performance. The ViBox chassis is designed with eight 3G SDI channels, combining CPU and GPU processing with 1 Gb/10 Gb connectivity and full IP architecture. This commodity hardware is optimized to achieve the following:

- Record up to six or seven HD SDI cameras/feeds with 16 embedded audio channels
- Playback clean and dirty HD SDI program feeds while simultaneously recording them on RAID storage
- Digital audio mixer with 18 analog audio inputs and eight Analog audio outputs
- Import graphics or use external live graphics integrated via NDI
- UI on 27-inch Touchscreen for one user with option to add a second touchscreen in a collaborative environment

The ViBox architecture has also been designed to tackle the transition to "at-home" productions. As the operational costs to send staff on-site continues to be a significant part of the budget, producing content back at the facility allows for less staff at the venue. It allows for additional budget savings with the ability to scaled-down the cost of the control room with less monitoring and hardware while also decreasing the staff needed to operate the system.

This powerful ViBox server is driven by a pioneering, intuitive user interface that breaks with the norm, to embrace and drive the next generation of users. The user interface is designed to be fully controlled with an optimized 27-inch touchscreen. The visual nature of the interface makes the actions instinctive as you are selecting and manipulating that which you see on the screen.

The key attribute of the interface is the intuitive automation that allows users the ability to create such high-level productions. User defined



automation rules allow for context-based transitions (cut live cameras, trigger graphic replay wipes, use mix effects between replays, trigger graphic wipe back to live, etc.). This integrated level of design allows the user to concentrate on telling the story of the action while the built-in automation eases the burden of operation.

The capability of the ViBox was summarized in a recent case study by a high-profile broadcaster. The requirement to feed a substantial number of media channels with complementary events forced a new plan with a fixed budget constraint. The key was the broadcaster still expected their high standard of deliverables for the live coverage of these events. The previous staff for covering similar traditional six camera events was 29 people. Adopting the new workflow around the ViBox cut the staff down to 12. These types of numbers show the impact and value the ViBox solution can bring while delivering on the high-quality production expectations.

www.simplylive.tv



SONY ELECTRONICS

XDCAM Air Cloud-Based ENG Subscription

Addresses the Need to Acquire and Stream to Air Faster and More Efficiently

XDCAM Air addresses the growing need to acquire and stream to air faster and more efficiently, while allowing video journalists greater freedom in the field. It is a cloud-based ENG subscription service that is designed for the ENG community. Its comprehensive workflow is designed for speed to air, from shooting to post-production. XDCAM Air harnesses the power of Sony's XDCAM technology, which evolved from optical disc to file-based workflows and cloud computing.

With XDCAM Air, camera people and operators now have the ability to work more quickly and efficiently, concentrating on the story at hand, with the camera directly integrated into the workflow.

Upcoming features will provide intelligent functions such as live streaming, XDCAM mobile compatibility and metadata workflow. XDCAM Pocket is XDCAM Air's mobile application, which can turn a smartphone into a small camcorder by transmitting a quality live stream through the mobile device's LTE network using QoS stream mode.

XDCAM Air will be interoperable with most of major systems, both



from Sony and third parties. Sony will continue to develop new features and workflow for XDCAM Air, with further versions planned to support content management, enhanced device control as well as edit integration with NLEs.



www.sony.com/professional

TIMECODE SYSTEMS LIMITED

UltraSync ONE Wireless Timecode Sync

A More Compact & Cost-Effective Sync Solution for Multicamera, DSLR & VR

With multicamera and multiaudio shoots now commonplace, the volume of footage captured and media generated during a shoot has increased dramatically, making the accurate synchronization of all sources more crucial than ever. UltraSync ONE is the smallest, lightest, wireless timecode, genlock and word clock generator and transceiver on the market. By making it easy to capture, log, search and synchronize sound and video content captured during multicamera film and television shoots, it delivers significant time and cost savings from acquisition through to post production.

Our goal with UltraSync ONE was ambitious: inject the full power of timecode, genlock and word clock sync technology into the most compact wireless sync product on the market. All at a pricepoint that makes it the only sensible option and the de facto option in a multicamera environment.

Simple setup. Multiple applications. Whether it's for a straightforward multicamera shoot, a solution for a VR rig or a sync solution for DSLRs, UltraSync ONE can be used in all these scenarios. And more. In fact the same UltraSync ONE can be used one day using the audio timecode output of a DSLR, the next on a main camera in the studio and then later as part of a VR rig.

A superior sync UltraSync might be small, but it delivers the complete Timecode Systems sync experience: timecode, genlock and word clock all in one product. And not just any genlock; the most accurate genlock on the market. Units sync completely wirelessly over BLINK RF and there's also the added ability to monitor and control units using the BLINK Hub app.

A smarter solution UltraSync ONE introduces a whole new level of portability, versatility and control to wireless synchronization. Compact proportions, a 128x32 high-resolution OLED display, professional locking miniature COAX connectors, a USB C connector for firmware updates and battery charging, and cleverly concealed internal diversity antennas - a few examples of how ease of use was just as important as being aesthetically pleasing when it came to the product's design.

A versatile solution You can configure UltraSync ONE to generate

the master timecode for the shoot, or alternatively jam to house timecode or an OB truck. And the UltraSync experience is just as amazing whether syncing multiple units with each other or combining them into a network with cameras and sound equipment using other Timecode Systems products for timecode. This is down to using uncongested sub GHz frequency bands for a completely reliable synchronization with a range of 200m.



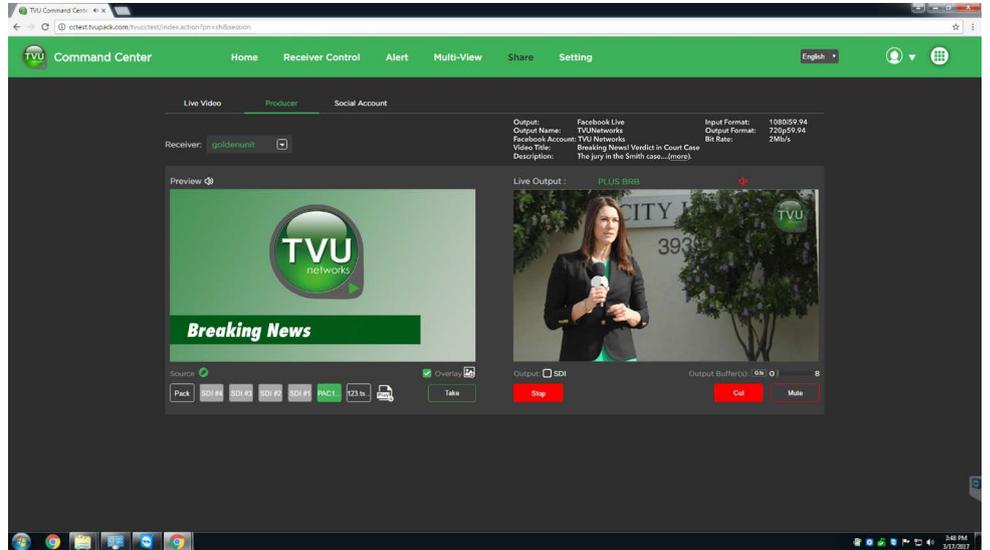
The power of 25 hour battery life. We've revved up the power of the UltraSync to provide 25 hours battery life from a single charge. That's with RF, genlock and the OLED display all running at full capacity. So no matter what twists and turns a shoot takes, we can guarantee the UltraSync ONE battery will last a full shooting day. And even with all this extra power, it's still unbelievably thin and light.

TVU NETWORKS

TVU Producer for Social Media

Web-Based Live Production for Social Media

TVU Networks is introducing TVU Producer for social media production. It features a simple to use web interface for producing live content for social media. Designed for use by Digital and Social Media Producers, it allows for the seamless switching of TVU transmitters, SDI and video slate sources for IP streaming output. TVU Producer has configurable graphic overlay and encoder delay (e.g. for the protection of profanity / wardrobe malfunctions). It fully supports Facebook Live and also allows configuration for a variety of mainstream CDNs. TVU Producer runs from the TVU Transceiver and also TVU Command Center web interface.



www.tvunetworks.com

ARRAKIS SYSTEMS

ARC-Talk-Blue News Talk Console

With Five Mic, One USB and Two Bluetooth Channels, It Is Unprecedented

With its features and price point of only \$1,099, the ARC-Talk-Blue is unprecedented. This eight-channel board has five mic (one A/B with line input), one USB and two Bluetooth Phone channels, making the ARC-Talk-Blue the ultimate news talk console. Being extremely compact, it is also excellent for taking on the road or using in a production studio.

The Bluetooth channels allow you to connect to any Bluetooth-enabled device, whether it is a cell or landline phone. This eliminates any need to get a phone hybrid, and saves dramatically on costs. With two Bluetooth channels, you can conference two callers or stream multiple devices at the same time. Use the Talk buttons to talk to each Bluetooth caller off line.

Bluetooth allows you to connect wirelessly to any Bluetooth-enabled device, such as a tablet, MP3 player or recorder. This is ideal for any station with lots of DJs who want to use their own equipment and quickly connect and play their files on-air. With the ARC-Talk-Blue, you get twice the power.

Another key feature is the number of mic channels. With five mic channels you can accommodate any newsroom. These mic channels are extremely high quality and can use phantom power. The fifth channel is A/B and can be used either with a mic or a +4 db line input source with a balanced RJ45 connector.



The ARC-Talk-Blue also features a built in USB PC sound card on channel 8 so that you can play audio from your Windows or Mac PC while recording the console Program output with your favorite software.

With these features, and at a price of only \$1,099, it is easy to see why the ARC-Talk-Blue is the ultimate news talk board. Once again, Arrakis is the leader in radio console evolution. Follow the leader and visit our website today.

BROADCAST BIONICS

Skype TX for Radio

Radio's Answer to Skype

Broadcast Bionics has been working in partnership with Microsoft to develop a solution fitting Skype calls into the demanding workflow of radio broadcasters. The result is Skype TX for Radio, a real game-changer in audio quality, cost and simplicity of operation for talk radio, remote hosts, guests and reporters in the field. Transforming the way broadcasters make and receive Skype calls in the studio and integrating Skype seamlessly alongside traditional phone calls, SMS and social media.

For the first time, radio stations can deliver full multiline talkshow and contest formats using Skype. With multiple, codec-quality calls, all from a single PC. In fact, Skype TX for Radio delivers up to 16 lines from a single Skype TX for Radio server (or virtual machine), making the system highly affordable and hugely scalable.

Stations have access to millions of global Skype users who can all make codec quality contributions directly from their mobile phone, desktop or web browser. Skype TX for Radio opens new interactive possibilities for developing countries, enables a single point of contact for global broadcasters and allows interaction with podcast/streaming stations without access to traditional phone lines.

Skype TX for Radio can even accept traditional phone calls without a phone line for Skype accounts with a Skype number. Skype TX for Radio is seamlessly integrated alongside existing radio workflows through the PhoneBOX4 user interface. PhoneBOX4 combines Skype calls with traditional phone lines as well as SMS and social media.

Skype TX for Radio integrates access to the full Skype directory and search functionality into PhoneBOX4 as well as adding PhoneBOX4's caller history, analytics, visual talkback and recording functionality to Skype calls. Call details and even the Skype avatars can all be displayed



on Virtual Director, so streaming video and content shared on Facebook and Twitter becomes even more compelling.

Using Skype TX for Radio, reporters can contribute immediately to update rapidly changing situations, sports commentary or results, without the need for taking specialist broadcast hardware into the field. Skype TX for Radio has the capacity to allow Skype to be included in the call for action in talkshows and contests. Accepting up to 14 calls per Skype account and supporting multiple Skype accounts, lines and devices. Offering a high-quality way to accept, answer and screen high volumes of calls.

For high-quality audio, from anywhere in the world, Skype TX for Radio is the answer.



DB ELETTRONICA

Compact Direct Digital FM Transmitters

Offer the Incredible Purity of Audio Modulation in FM Broadcasting

Mozart DDS FM Transmitter / Exciter Series is the latest audio excellence in the FM Broadcasting industry thanks to latest-generation Direct Digital technology.

Main Benefits:

- Superior audio quality and sound purity thanks to the Direct Digital Technology
- Suitable for SFN networks application, with internal modulation phase adjustment and ultra-precise modulation delay to optimize SFN network setting.
- The highest AC efficiency, reaching over 70 percent for power over 500 W, obtained thanks to the GREEN RF™ technology.

Low maintenance costs, thanks to the easy access to all components, externally accessible cooling air filters and fans, very high MTBF for RF and power supply modules.

- Reduction of transport costs and simplified logistics, thanks to its compact design and low weight.
- Highest frequency stability due to Direct Digital Technology
- Complete WEB SERVER and SNMP Remote Control as options.

Uninterrupted service, thanks to an intelligent hardware and software protection system that reduces the output power without on-air interruption, keeping the RF devices always within the safe operating parameters in case of:

- Load mismatching
- Environmental over-temperature
- Cooling failure
- Amplifier breakdown



www.dbbroadcast.com/en_gb/products/fm-1/compact_direct_digital_fm_transmitters_mozart_dds_series_from_30w_to_3kw-15.html

DEVA BROADCAST

DB4402

High-Performance Dual FM Monitoring Receiver and Radio Streamer

The DB4402 — Dual FM Monitoring Receiver is a superb and highly practical combination between a logger and a streamer which allows

you to easily and accurately monitor and store all important parameters of the FM signal while simultaneously giving you the opportunity to listen to a constant, uninterrupted audio stream. The synchronized performance of both major functions is at the core of the idea for this model, as well as the unit's major asset. You can listen to the selected audio feed at the same time as the logger campaign is running. The design of this device relies on simplicity coupled with functionality to offer customers the opportunity of a single solution to both tasks.

Providing the stable, dependable operation characterizing all DEVA products, the DB4402 is fully DSP-based, with a built-in oscilloscope and an RDS/RBDS decoder with a BER meter. It also permits users to set alarms for RF, MPX, Pilot and RDS signal via email, SMS or SNMP. What is more, the TCP/IP and GSM connectivity provides easy remote control, monitoring and listening to the radio signal from any location.

The device offers a "Restore Factory Defaults" option and easy update of the firmware. It is an advanced solution giving customers a number of advantages and top all-round, multi-faceted performance as both a monitoring tool and a streaming device.

Features:

- Fully DSP-based core
- Built-in oscilloscope allowing Left, Right and MPX display
- MPX Power measurement with data history
- RF spectrum analyzer allowing to check the RF carrier parameters
- MPX spectrum analyzer for Left, Right and MPX measurements



- Selectable De-emphasis — 50 μ s and 75 μ s
- Built-in stereo decoder; stereo presence detection
- Date and Time settings with various formats
- LAN port for full TCP/IP remote control and monitoring
- Up to 90 dB μ V direct RF antenna input
- Adjustable alarms for RF, Deviation, Pilot and RDS signal
- Firmware update for future-proof operation
- Parameters Factory Restore option
- FM Band 87–108 MHz basic spectrum analyzer
- MPX, PILOT and RDS deviation meters
- Left and Right demodulated audio level meters
- Headphones audio output
- RDS and RBDS decoder with BER meter
- Intuitive application interface
- Alarm dispatch via email, SMS, SNMP
- Channel-status reporting via SMS
- RF and RDS measurements
- Remote listening via optional GSM modem
- Real-time audio program streaming
- Attractive price and very good price-performance ratio
- Very intuitive embedded WEB server for interactive supervision
- Proved and reliable hardware for 24/7/365 operating
- Easy installation and setup
- SNTP for automatic synchronization of the built-in clock
- Compact and robust aluminum case for high RF immunity



www.deva-fm-monitoring.com/products/db4402#description

DIGIGRAM

blu by digigram

Cloud-Based Service Simplifies Outside Broadcasting Contribution

blu by digigram is a cloud-based service that simplifies and democratizes outside broadcasting contribution

+++ BEFORE blu by digigram

+ *Technical requirements:* Operators in the field and in the studio had to manage diverse audio sources (codecs, telephone, smartphone apps) to make sure correspondents could access the studio. On-air mixing of these sources, particularly for events with multiple contributors, was tricky and required costly mixing console resources.

+ *Training:* Contributors had to be trained in the use of diverse audio codecs or accompanied by a technician to ensure audio was on air — scenarios that increase the cost of live contribution.

+ *Logistics:* The station engineer had to book expensive ISDN lines to reach the contribution site. Despite increasing use and ubiquity of IP codecs, the engineer still had to book and bring bulky field equipment to provide broadcast-quality content and struggle with IP infrastructure complexity.

+++ NOW WITH blu by digigram

blu by digigram drastically simplifies two challenges for broadcasters: enabling professional yet cost-effective content creation in the field, as well as on-air mixing of various audio sources in the studio.

++ blu by digigram is a virtual mixing console workspace.

In a single SaaS app, this cloud-based service unifies the robust capabilities of a true broadcast mixing console — including mix-minus, talk-back, audio record, and monitoring — with a set of virtual codecs and contact database.

Designed for the professional broadcast environment, blu by digigram makes it easy for studios to establish up to six simultaneous, high-quality conference communications between the blu mixing interface and any remote contributor with a web browser, traditional SIP codec, or even telephone as a backup. Offering three ways for contributors to connect and facilitating management of all connections within a



single web interface, blu by digigram not only ensures broad, economical accessibility, but also eliminates the need for advance ISDN resource scheduling, IP infrastructure configuration or the distribution of physical codecs to remote sites. There is no need for dedicated technical staff either in the studio or in the field. As a result, studios realize exceptional flexibility and agility in bringing live content into a broadcast production.

Behind this simplified mixing interface, blu by digigram is a broadcast-focused service that unites a virtual console and a professional studio interface over an encrypted connection, with no need for configuration.

++ Contributors are on-air in two clicks. blu by digigram facilitates content contribution from journalists, expert voice talent, and remote presenters. The service simplifies real-time contribution management by providing a URL that allows the contributor to be on-air in just two clicks. The whole sessions can be recorded for further off-air or repurposing operations.

blu by digigram is uniquely capable of supporting a complete remote contribution workflow in two clicks via the cloud.

+ *Click one:* The studio generates and sends a secure link via email to selected contributors.

+ *Click two:* The contributor connects simply by clicking on the URL from their preferred browser.

The contribution links are generated without the need for network/IT configuration or knowledge.

++ blu by digigram is a SaaS application that scales to accommodate future services. blu by digigram SaaS enables a unique no-fuss, no-hassle pay-as-you-go model for managing and processing contributed content from an array of sources, and these substantial time and cost savings allow broadcasters to dedicate more of their time and resources to creating the compelling, timely, and relevant programming that audiences demand.

To view a video of the product presentation, visit bit.ly/VideoBLU.

blu.digigram.com/en

DIGIGRAM

Digigram IQOYA *CLOUD SaaS

Makes Audio-Over-IP Codecs Interoperable

Digigram's innovative IQOYA *CLOUD codec-management software as a service (SaaS) gives broadcasters access to a robust broadcast SIP infrastructure while facilitating centralized codec management anywhere from any authorized device. This solution enables valuable interoperability, worldwide discovery and access security with a broad array of IP audio codecs from different manufacturers.

+ An SIP infrastructure? What for?

Unlike conventional end-to-end contribution using proprietary protocols, a SIP infrastructure works as a transparent codec umbrella. It provides:

++ Strong security of all audio streams to protect the broadcaster's IT infrastructure

++ Simple call management through mutual discovery of all authorized codecs — no more IP address/ports, only predefined contacts lists and associated profiles

++ Full interoperability between SIP/ACIP-compliant codecs

+ Why is interoperability important?

Interoperability allows broadcasters to diversify their codec fleet and to invite correspondents using their own IP codec gear, including simple SIP phones or even gateways from other technologies such as WebRTC.

+ Why would a broadcaster need IQOYA *CLOUD SaaS?

++ 1. *To control and monitor what's going, at all times, from anywhere*

This first-of-its-kind cloud-enabled tool allows users to take action in the event of network faults and failovers to ensure the availability and continuity of high-quality outside broadcasts. Providing real-time monitoring and control of all IP codecs on a network, IQOYA *CLOUD SaaS allows operators to accept and initiate calls, monitor current codec status and configure codecs in one click, on the fly, from any authorized browser.

++ 2. *To transform various ACIP-compliant codecs into a managed codec fleet.*

Offered on a subscription basis and accessible from any studio or nomadic device, Digigram's IQOYA *CLOUD SaaS makes it easy and affordable to operate audio codecs and bring content into the control room. Even third-party codecs or SIP phones can be incorporated into a fleet if they are ACIP-compliant. With the flexibility to access such codecs, a broadcaster can very quickly and cost-effectively extend its codec fleet. In this configuration, using Digigram's IP codecs provide additional functions to broadcasters such as phone books synchronisation, centralised setup and update among others. Because the application is operated by a large cloud provider and based on proven Oracle® technology, users enjoy exceptional

redundancy and a high degree of security.

++ 3. *To focus only on broadcasting, rather than on handling proprietary technologies*

Eliminating the need for IT engineers on either side of the connection, this turnkey application is accessible from anywhere via the web browser of any connected device (mobile, tablet or PC). Built on Digigram's highly secure SIP broadcast infrastructure, which includes the stream relay, session border controller (SBC), and presence server, IQOYA *CLOUD provides simple real-time control of all registered ACIP codecs across the network. Because all codec brands appear the same way within the browser interface, management is as straightforward as clicking a mouse.

++ 4. *To capitalize on the flexibility of SaaS*

The SaaS model allows users pay only a monthly recurring fee rather than invest in significant IT development or capital expenditures. It also supports scaling up or down to accommodate special events. Additional IP codecs from new sites and correspondents can securely be added to the fleet in order to enhance coverage.

Only Digigram's IQOYA *CLOUD leverages SaaS to make interoperability affordable for all broadcasters. The application affords users more democratic access to outside broadcasting, not only in terms of money but also in technical capabilities, freeing them to take full advantage of any SIP-compatible audio codec, anywhere.



www.digigram.com/audio-over-ip/iqoya-cloud-codec-interoperability

DJB SOFTWARE INC.

iBroadcaster for iTunes PRO

Instantly Turns iTunes® Into a Radio Air-Production Studio

iBroadcaster for iTunes® Windows® gives the student, novice, retiree or active Air Talent a real “radio station” feel on a home computer. It lets you manage and instantly use your personal music library in the familiar iTunes® interface. Any changes made to the music library in iTunes® are then reflected on the iBroadcaster for iTunes® audio libraries. Your iTunes® GENRES become the Tab categories in iBroadcaster. You can run both iBroadcaster for iTunes® and iTunes® software at the same time on single or dual monitors and is touchscreen-friendly. The iBroadcaster for iTunes® uses onboard sound card(s), user adjustable segue allows tight or relaxed playout transitions, with triple overlapped audio in M4A, MP3, wav and other audio formats that are iTunes® supported.

iBroadcaster for iTunes® organizes all your iTunes® audio in the Air Screen Hot Keys, Genre Tabs and a Drag Bar for fast button page changes.

The 10 event Play Stack can be filled with iTunes® pre-generated playlists, Air Talent live assist drag n drop audio from the Hot Keys or by using the integrated Grid based Daily & Weekly Music Scheduler. Daily logs are automatically generated allowing 24/7 operation with minimal effort once the Scheduler Grid Template is programmed. iBroadcaster also writes an affidavit (asrun log) for reporting and billing.

Live assisted programming is fully supported, with the Keyboard Mapping feature that allows users to use the computer keyboard as Start/Stop buttons just like they do in radio studios. Another huge bonus is that “No Air Console” is needed here! Simply add a USB mic, manage the Mic to Music level balance with the on-screen controls, with the auto-ducking your mic will always mix just the way you want it. Plug in your favorite headphones and turn on the built-in streaming server, connect

to your web stream host and you are “Broadcasting Baby” just like they do in major market radio.

iBroadcaster for iTunes® also comes with a built-in eight-band program equalizer and three-band vst audio processor. The iBroadcaster for iTunes® is VST plug-in-compliant so you can add even more powerful processing tools to further tweak your program.



The iBroadcaster for iTunes® was introduced at the 2017 NAB Show, and sells under the \$600 price range. Email support is standard, however domestic U.S. and Canada Phone Support plans are available and very affordable.

For more information or to download a fully working demo, please visit our DJB website at www.djbradio.com.

For sales call us at 702-487-3336 ext 1.



djbradio.com/ibroadcaster-for-itunes-pro

ENCO

WebDAD Browser-Based Radio Automation

Control Your Radio Automation System From Any Standard Web Browser

WebDAD provides users with a rich and fully virtualized toolset to remotely access and control their ENCO DAD radio automation systems from any web browser. WebDAD allows broadcasters to take full control of the radio station from any remote location with a network connection and lays the groundwork for stations to become completely virtualized or cloud based. After logging into WebDAD from their preferred web browser operators can control the complete on-air automation interface over IP. This includes the ability to manage and drive on-air presentation, playlist manipulation, voice tracking and other critical production tasks across the end-to-end workflow. Technologies like WebDAD not only introduce new operational efficiencies for full-time station personnel but also allow part-time, contract, and remote workers to access the playout system. This will open the doors to stations with a decentralized work force and allow talent to be heard in

several markets with the ability to voice track from anywhere. With WebDAD, board operators no longer need to be physically at the radio station or sitting in front of the automation system to control and playout a live radio show. They can now take full control of their radio station as if they were in the studio via a web browser, on their iPad, mobile phone or other connected device.

Station groups can also control their radio stations nationwide from one centralized location as if they were on-site. Remote access and control is especially beneficial when conducting a remote broadcast. The remote talent no longer need to communicate with the board operator at the studio to determine what is coming up next and when to start and stop speaking.

Radio automation can be now hosted at a transmitter site or in the cloud with full functionality made possible with WebDAD.



GATESAIR

Intraplex IP Link MPXp

Optimizes Bandwidth for Moving AES192 and Analog Composite Signals Over IP

The GatesAir Intraplex IP Link MPXp is the industry’s first professional codec to support AES192 digital and analog composite signals over a secure and reliable digital IP path in the same solution. IP Link MPXp codecs provide flexible sampling rates (16, 20 and 24 bits) and sample size options to optimize IP network bandwidth utilization based on the FM services being transported. With its unique built-in bandwidth reduction technology and signal parameter selection, broadcasters can transport uncompressed AES192 signals as low as 1.8 Mbps — a more than 50 percent reduction in bandwidth utilization compared to most codecs on the market. This exceptional bandwidth efficiency opens more headroom for increased packet protection, as well as additional audio and data services.

The IP Link MPXp codec offers a strong value proposition as a feature-rich, future-proof codec to support analog composite transport today

— and AES-192 composite transport when the broadcaster upgrades from an analog to a digital exciter. However, its flexible dual-domain capability allows the broadcaster to install a newer audio processor supporting AES 192 and have it interoperate with an exciter supporting only analog composite signal interface today. This not only provides a transitional path for a digital exciter upgrade, but also enhances signal quality by keeping it in the digital domain across the IP path.

Like previous-generation IP Link codecs, the Intraplex IP Link MPXp codec also simplifies network architectures and maintenance to reduce capital and operational expense. As wide-area network pipes grow larger, the Intraplex IP Link MPXp codec enables broadcasters to aggregate all FM processing equipment at the headend. Meanwhile, advanced security measures protect the broadcaster’s signal thanks to the codec’s integrated firewall.

The IP Link MPXp codec additionally offers the same extensive feature set as other IP Link codecs. This includes GatesAir’s unique dynamic stream splicing technology with time and network diversity at

the streaming layer to mitigate IP packet loss and eliminate off-air time. Other common IP Link codec features in the MPXp including multiple input and output ports for signal redundancy, decoding of audio and RDS content from either the input or output signal, and the option to incorporate external SCA subcarrier signals into the output signal. Its integrated RDS decoder further reduces equipment costs for the broadcaster who was previously forced to install expensive outboard boxes to support RDS.

IP Link MPXp codecs are suitable for use in IP-based Studio-to-Transmitter Links (STLs) as well as distribution networks. Support for IP multicast and multiple unicast streams enables one encoder to feed



multiple decoders. By incorporating three IP interfaces that can be used for streaming and management, the IP Link MPXp system can provide a level of reliability not seen in comparably-priced codecs. At the hardware level, the N+1 redundancy with built-in control for both MPX routers and data switches provides automatic synchronization of configuration and switch over capability. This reliability is further enhanced with optional hot-standby power supply.

The IP Link MPXp also includes programmable RTP-level forward error correction and interleaving to bring additional protection against burst packet losses. A convenient graphical front-panel user interface and comprehensive web browser interface makes the IP Link MPXp easy to monitor, configure and operate. When coupled with Intraplex LiveLook software, users enjoy enhanced visibility into network performance through advanced network analytics, monitoring and troubleshooting capabilities. Additionally, optional Intraplex SynchroCast capability to dynamically align the playback of the MPX signal at geographically dispersed transmitter sites for single-frequency network (SFN) broadcasting.

www.gatesair.com/products/transport/audio-contribution-distribution/intraplex-ip-link-mpxp

GLENSOUND ELECTRONICS LTD.

The Virgil Studio Headphone Amplifier

Small Size, But Big Specification Studio Grade Headphone Amplifier

Designed for use in radio and broadcast studios, the Glensound Virgil is a clever little headphone amplifier for providing crystal clear audio into headphones and is ideal for talent headphone monitoring positions under desks or control surfaces.

Packaged in a small and robust format and designed to be permanently mounted in studios wherever a headphone circuit is required, the Virgil provides a simple interface between Dante™ network audio systems and users headphones.

The Virgil encompasses our unique headphone amplifier circuit, which automatically provides the correct output level to match the impedance of the attached headphones (to produce the same volume high impedance headphones require a much greater output level than low impedance).

Virgil receives 2 x audio circuits from a Dante™ network and routes one to the left and the other to the right channel of the headphone amplifier.

A front-panel volume

control allows the user to adjust the output volume.

Three mounting holes are supplied to enable the Virgil to be mounted underneath a studio desk in a suitable location for the users headphones. Needing just one single network cable to carry both power and audio to the Virgil, installation is made very simple.

As well as being suitable for low and high impedance headphones our unique headphone amplifier circuit can be connected to both stereo headphones and mono earpieces, making the Virgil suitable for driving television presenters' ear pieces.

Many broadcasters are already utilizing the power of Dante™ network audio in studios and broadcast centers. Having a small simple headphone

amplifier available for very easy installation in any location by connecting just a single network cable to their infrastructure will make studio setup for broadcasters much easier and simpler than historically possible.



www.glenSound.com

INOVONICS INC.

AARON 655 FM/HD Rebroadcast Translator

Unparalleled Sensitivity of FM & HD1-8 Program Sources for Rebroadcast

AARON 655 introduces digital HD Radio to Inovonics' line of high performance rebroadcast/translator receivers. The AARON series excels in even the most challenging reception conditions, combining premium features with unparalleled performance.

AARON 655 can select among multiple program sources: off-air analog FM, HD Radio channels HD1-8, IP-streamed programming and analog and digital line inputs. The included RDS/RBDS encoder can regenerate and customize incoming data or convert HD Radio PAD or streamed metadata to the RDS display format. The composite/MPX output is complemented by configurable analog and digital line outputs

More than just a receiver, AARON 655 includes comprehensive audio processing with 10 factory and 10 user presets. This makes it easy to craft a custom "sonic signature" from any selected program source.

In addition to quick and easy frontpanel setup, an IP interface allows two-way program streaming, plus total remote addressing and control with any PC or mobile device, including remote listening and full SNMP support.

Reception alarms may be programmed to switch programming to backup sources. Alarms trigger local tally closures and instantly dispatch SMS/email notifications to selected personnel. Alarms are also logged for later analysis.

AARON rebroadcast receivers feature a "responsive" Web Interface, allowing complete setup, listening, logging and control of the unit from your PC, or mobile device. Reliable two-way connectivity is ensured with a built-in Dynamic DNS utility. Advanced off-air metering tools include an FM/HD



BandScanner™ for a spectral display of the entire band at the receiver location. Analog-FM auto-blending and other receiver parameters are controlled via manual or automatic reception processing.

FEATURE HIGHLIGHTS

- Uncompromising DSP-based (SDR) receiver performance
- A built-in BandScanner™ for local RF spectrum analysis
- Accepts program audio from analog FM, digital HD1 through HD8 programs, streaming sources and analog or AES-digital line inputs, all with assignable failover audio backup
- Audio processing with AGC, parametric EQ, bass "punch" enhancement, multiband compression, independent broadband / HF peak control and composite clipping
- A regenerated and peak-controlled composite/MPX output, plus balanced analog and AES-digital program line outputs for excitors with built-in stereo generators
- An internal RDS/RBDS encoder that can customize incoming off-air RDS data, convert HD Radio PAD to RDS, convert streamed metadata to RDS, or receive IP Telnet data
- An intuitive remote-control Web Interface with remote audio monitoring; self-logging reception alarms give instant email and text notifications
- SNMP remote monitoring and control of all AARON 655 functions



www.inovonicbroadcast.com/model/655

LAWO AG

Ruby Visual Radio Console

Intuitive, Intelligent Control: Introducing the Visual Radio Console

Ruby, the newest mixing console from Lawo, is the perfect fit for today's computer-centric radio environment. Ruby meets the demands of modern radio by blending the hands-on immediacy of physical faders with the efficiency of touch-sensitive onscreen controls. Ruby frees talent to create easily, naturally, effortlessly — in whatever way suits them best.

This is why Ruby is “the visual radio console.” Ruby's physical and virtual controls complement each other, with multitouch-enabled information displays that let operators adjust settings quickly and easily, on-screen meters and custom controls that can quickly dock to free screen space for other production tools, motorized faders that assume preset positions instantly, and advanced automated functions like AutoMix, the intelligent hands-free algorithm that automatically maintains the balance of multi-mic productions.

Ruby's mixing surface is functional and beautiful, designed for fast, accurate operation. Built in Germany to exacting standards, Ruby features all-metal construction, premium 100 mm. faders, high-resolution OLED displays, programmable function buttons, big keys with LED backlighting and ultra-reliable switches and rotary controls.

But physical controls are only part of Ruby's story. Today's radio talent works in studios dominated by monitors, interacting with screens and displays as much as with the mixing console. Ruby complements this modern workflow by integrating console controls into Ruby's multitouch-enabled display. Talent can use these touchscreen controls to make fast level adjustments with “virtual faders,” tweak EQ and dynamics processing, load snapshots, change routes and more. You can even design custom, context-sensitive screens to suit your station's unique operating style.

And Ruby actually reduces monitor clutter: instead of a dedicated console display, Ruby's console informatics instantly “dock”, freeing screen space for talent to work with playout systems, audio editors and

other studio tools — while meters, clocks and timers stay visible at screen's edge.

Finally, Ruby's Power Core is perhaps the most powerful mixing engine ever designed for a radio console, with capacity for up to 4,000 simultaneous signals. It also boasts a massive amount of DSP for audio shaping — up to 96 channels of parametric EQ, expansion, compressing,



limiting, de-essing and delay synchronization, which can be mixed into up to 80 buses. Standard I/O includes two Ethernet ports, each carrying 64 AES67 /RAVENNA AoIP inputs and outputs, and four MADI ports to handle a total of 256 MADI signals. Additional analog and AES/EBU interfaces are available to fill rear-panel expansion slots.

LOGITEK ELECTRONIC SYSTEMS

Helix Radio Digital Console

A New Approach to Radio Console Operation

Helix Radio represents a new approach to the operation of broadcast consoles. It incorporates the latest multitouch technology along with a suite of familiar controls to offer easy, yet fully customizable operation.

The world has become accustomed to the use of touchscreens. Whether they are in your mobile phone, on a tablet or part of your automation system, touch devices have become the norm for running applications and making menu choices. Younger operators at your station have literally grown up with these devices. Logitek’s Helix Radio combines the best of the multi-touch world — offering simple menu selection and easy screen operation — with the convenience and easy operation of traditional controls such as large physical buttons and smooth faders. The result is a console built for the “touch generation,” but with easily accessed physical controls that your experienced operators will demand.

Helix Radio is available in sizes ranging from six to 24 faders (fader layers are available for system expansion as needed). Each Helix console includes a Monitor module and an HDMI output, which allows for connection of a separate touchscreen meter or control bridge. Modules can be mounted in a single or split desktop frame. Touch-sensitive faders are motorized for seamless integration with automation systems; they will also automatically track settings made by operators who are running the system remotely. Each Fader module in Helix Radio contains a 7-inch IPS touchscreen which provides context-sensitive function access; six motorized faders with touch-sensitive fader caps; large ON

and OFF buttons with LED RGB-assignable colors; bus assignment for Program and four to eight AUX busses; and direct access to CUE. Metering indication for each fader appears above the fader on the touchscreen panel.

The Monitor module also contains a 7-inch IPS touchscreen with context-sensitive function access; volume faders for Monitor and CUE; a CUE volume control knob; Studio/Guest volume control knob; four hotkeys for main monitoring functions and integrated profanity delay control with a large “dump” button. Program metering appears on the touchscreen panel, along with delay status and other information. Powered by Logitek’s JetStream AoIP platform, Helix Radio offers all of the functionality needed for smooth, efficient operation. 24 mix-minus busses are available, which automatically track their assigned sources, no matter where those sources appear on the console. The JetNet interface available in the JetStream provides a direct interface to automation systems, allowing those systems to operate



the console without the use of a separate sound card.

Helix can be controlled from the road by your talent. Using the new vMix Touch application, operators at remotes can take control of the console to operate their own faders, activate equipment and select functions as needed. vMix Touch can also reside in the studio, presenting large easy-to-read meters, router controls, virtual faders and other functions on a standard touchscreen display in the studio. With Helix Radio, “Console Meets App.”

NAUTEL LTD.

HD Radio SFN

Seamless Single Frequency Networks for HD Radio

Many broadcasters face challenges in serving listeners located in obscured areas, such as behind mountains. Traditional analog single frequency networks (SFN) approaches can create overlapping coverage and result in poor to unacceptable reception. Nautel's HD Radio SFN solution enables two or more transmitters to work together to provide excellent coverage throughout a region. Nautel has developed a way to provide seamless transition from one coverage area to the next for HD Radio transmission. The technical approach gives broadcasters new options for reaching listeners in challenging locations. Nautel's HD Radio SFN has been proven in field trials at KUSC, just north of Los Angeles.

Specific advantages of the approach include:

- a hybrid FM+IBOC booster installation that minimizes on-channel interference -tight time synchronization between all nodes of the SFN for both FM and IBOC.
- a method to achieve precise input to output time synchronization for In-Band-On-Channel (IBOC) signal transmission across multiple HD Radio transmitters
- seamless hand-off from one transmitter to the next

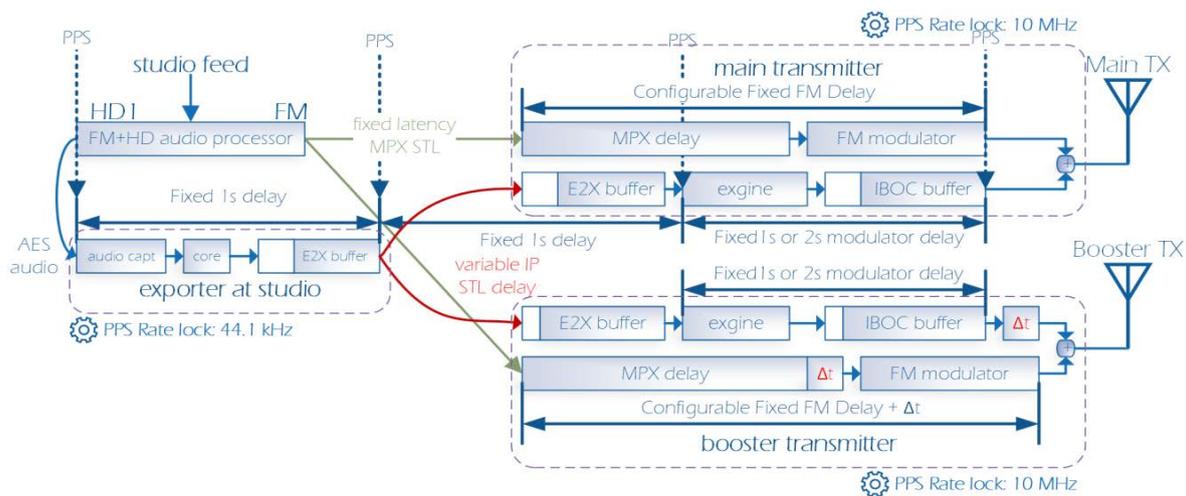
Additional detail: Digital radio transmission SFNs can be employed to help broadcasters improve coverage. Successful radio broadcasting requires that numerous listeners are reached with the best possible

signal in the most cost effective way. Typically, this is best achieved by maximizing the radiated power of a single transmitter site. However, there are cases where it is not practical for a station to extend its coverage and listenership with a single transmitter approach. While an SFN of multiple analog FM transmitters on the same channel can address these cases, interference will always degrade the analog FM audio quality and can at best be minimized. Digital radio transmission, on the other hand, maintains good audio quality unless the signal is lost entirely. Broadcasters can achieve seamless HD Radio transmission hand-off from one transmitter to the next provided the engineering guidelines are observed.

Digital radio transmission in the form of In-Band On-Channel (IBOC) or other orthogonal frequency division multiplexing (OFDM) standards are ideally suited for the following application areas.

- Fill-in FM Booster Stations
- Micro Boosters
- Roadway Coverage
- Wide Area Coverage
- All Digital HD Radio SFN

Nautel has successfully demonstrated an IBOC SFN implementation at KUSC, Los Angeles, that showed that IBOC coverage extension is possible even in difficult mountainous terrain.



SYNCHRONIZED IBOC SYSTEM ARCHITECTURE

NAUTEL LTD.

HD MultiCast+ Importer/Exporter

Affordable, High-Performance HD Radio Multicast System

Nautel HD MultiCast+ is for radio stations wanting the simplest, affordable system to let their listeners enjoy HD Radio. The all-in-one solution reduces complexity and cost, and is built on a high-performance, extensible 2RU platform. Features include multichannel audio card, GPS receiver, and Nautel Reliable HD Transport*. Station logo support is planned for a future release.

HD MultiCast+ leads the way with radical cost reduction, simplicity, and long term investment protection for radio stations. It aggressively

promotes HD Radio, further enabling the industry to drive digital radio as a standard that everyone can enjoy.

HD MultiCast+ platform can be operated in all-in-one mode or as Importer or Exporter, allowing operators to match it to their specific studio-transmitter site topology. The Importer codes the secondary program services of an IBOC transmission, which can include digital channels HD2, HD3, HD4 and data services. The Exporter combines the digital version of the main audio stream, HD1, with the secondary

audio and data services from the Importer.



**Nautel Reliable HD Transport: an award-winning tool that reduces the bandwidth requirement and enhances the reliability of the exporter to excite data connections.*



www.nautel.com/solutions/digital-radio/hd-radio

NEXTRADIO

Dial Report Broadcast Radio Insights

The Largest Over-the-Air Radio Delivery and Measurement Source

Dial Report is unique and there is nothing else like it serving the radio industry.

Dial Report measures broadcast radio, feed from the NextRadio app, and delivers the insights found in digital advertising channels. It is the point of access to the largest source of processed data on FM radio consumption and behavior. We are changing the way advertisers, broadcasters, record labels and data companies acquire and use radio listener insights by delivering granular, near real-time radio listener data that allows for smarter targeting and faster optimization.

It provides Campaign Analytics mid-flight and at the end of a campaign outlining for brands the number of listeners and viewers, top formats, top stations, demographic information on listeners, in-store visits, interactions plus much more. It also provides Listener Intelligence with insights on reach, sessions, market population, AQH by person and rating and CUME by person and rating.

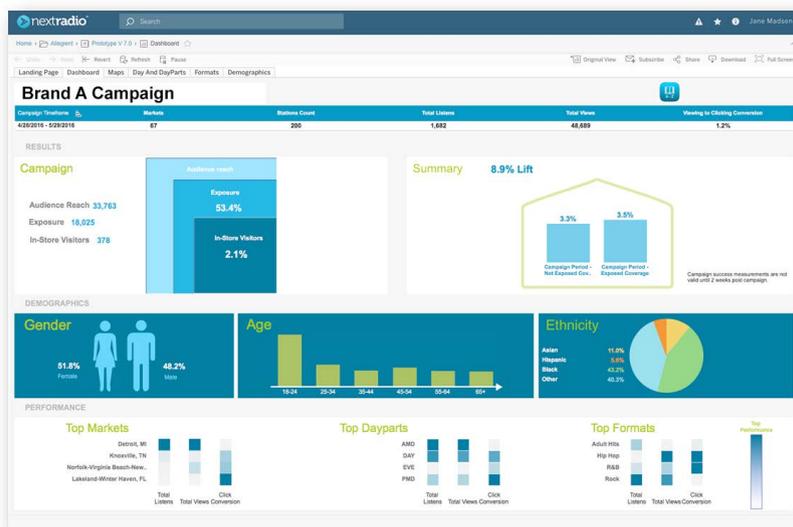
And last it gives access to Content Intelligence focusing on reach, listening sessions, total listening time and insights into social media impact from the campaign.

Here are some examples of the possibilities this data can provide: Allow for local radio measurement to demonstrate direct correlations between a radio campaign and real world behaviors such as physical store visits? Or perhaps identify

the targeted demographic profile of the entire listening audience in the exact moment when an advertiser's campaign aired on every intended station, whether broadcast or streamed? Going deeper, consider any form of content, commercials, music, talk shows or promotions, and every moment of radio measured and aligned with online or physical world behavior. A morning show could demonstrate that their mentions and adoration for a brand resulted in online or social media activity, and possibly even phone calls or visits to a brick and mortar.

New song spins could be analyzed down to every single radio station that played the song and the exact profile of the audience who listened perfectly (start to finish) or left mid-song for a new station. The same music audience might tell a record label or event management company where to find the listening audience most likely to fill a venue on the concert tour. While one would not expect a particular format to change their political slant on programming, data analysis of talk shows could

indicate the real-world behavior of listeners at a moment in time or over a longer period of listening. All of this can be accomplished with the Dial Report and much more. It is time radio provides big data and campaign insights in a real-time format that can help agencies, brands, etc. maximize the power of radio's consumer reach and confirm the ROI on their spend.



ORBITAL MEDIA NETWORKS INC.

OmniStreamer Two-Path HLS Audio Receiver

Balanced Professional Audio, S&F Features, Eight Relays, Fixed Latency, AAC

The OMNiStreamer platform is a full-featured network distribution system that includes advanced capabilities and control only available previously using expensive head-end gear and satellite receivers.

The OMNiStreamer receiver is a dual network-path HLS or RTP audio appliance, delivering contribution-grade audio, reliably over public internet, corporate WAN, or local network. While C-Band satellite distribution may be the pinnacle of reliable real-time content delivery, the large antennas, high cost of bandwidth, and expensive proprietary head-end gear can make this model cost-prohibitive to smaller broadcast networks.

Private point-to-point networks can be cost-effective for a very limited number of affiliates, but quickly become more expensive than satellite distribution when the network grows.

Previously available public internet distribution systems have been plagued by congestion issues including audio glitches, long programming interruptions and unsynchronized playout across multiple affiliates.

These “solutions” also suffer from the use of cobbled-together consumer grade hardware, making for low-quality audio and a severe lack of professional features.

OMNiStreamer answers yes to dual-network paths for reliable connections, Store & Forward features like regionalized spot insertion for better monetization, automation control relays, PAD Data pass-through, the highest-quality Fraunhofer AAC LC and HE audio, scheduled program playback and local content playout all at a very attractive price-point.

Syndication-grade audio quality and a full feature-set drove the design of the OMNiStreamer.

Pluggable Phoenix™ connectors provide pro-level, balanced audio (optional AES3), and 8 N.O. relay closures. PAD and other ancillary data is passed by UDP and old-fashioned serial delivery.

A host of other features will make you wonder how so much capability could also be so affordable, with a quantity one list price of \$799.

The platform’s dual internet path support, innovative error-correction and path-length accommodation algorithms dramatically reduce the effects of public internet congestion — dramatically reducing audio

glitches and dropouts while providing distribution to a large number of affiliates that remains synchronized network-wide, even across the challenges and uncertainty of the public internet.

Cues and commands from the content server remain tightly synchronized with program audio.

OMNiStreamer says *no* to on-air trainwrecks.



The OMNiStreamer supports network control of program authorizations, triggering and playback of local content, optocoupled logic inputs for local control, and multi-level access control for the built-in web interface.

The OMNiStream Server software runs on a standard Linux server, and ingests multiple audio streams from off-the-shelf audio interfaces.

Control and command cues as well as PAD data is received by UDP, from your favorite automation system or our UDP-32 encoder.

Orbital Media Networks offers competitive hosting for origination or relay of your programming, through our hardened data center in Englewood, Colo.

The Orbital Media Networks Data Center is secure, manned 24/7/365, has multiple redundancies for power, and connectivity to disparate internet providers via multiple fiber and copper entrances.

Once owned by a major radio group, we’ve been in business since 1985, providing satellite and IP services to broadcasters and other businesses, and disaster recovery communications to first responders, energy companies and government agencies.

www.omnistreamer.com

PARAVEL SYSTEMS

WallTime NTP Clock and Notification System

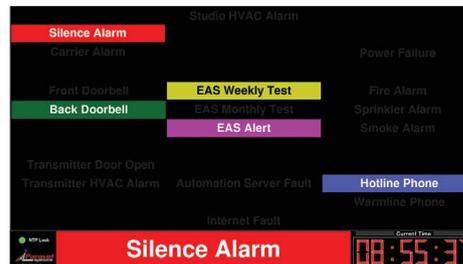
Keep Your Staff Informed and On Time

The WallTime NTP Clock & Notification System from Paravel Systems is the first device to combine several essential services for your studio into one streamlined product. WallTime eliminates the need for expensive synchronized studio clock systems and for the studio notification and alert devices of the past. WallTime provides two primary display modes: an Analog Clock display with widgets and a Notification Status & Alert Monitor.

The Analog Clock display features an always accurate NTP synchronized analog clock that can be customized with wallpaper images to display station logos or other graphics on a large easy to read clock face. Adjacent to the analog clock, two user-selectable widgets can be displayed to provide additional information. There are several widgets to choose from including a Digital Clock display, programmable show Segment Counters, Alert Notifications, an html Text Viewer that can display metadata from automation systems, an On-Air light and more.

The full screen Notification & Alert Display provides simultaneous status display for up to 36 signal inputs and an NTP synchronized digital clock. When an alert state is triggered, the notification field will illuminate and the alert message can be displayed in a large alert window at the bottom of the screen or as a full-screen attention grabber that will assure that your staff is immediately informed of any important alert messages. You can also remotely send message text to a WallTime display. This is great for getting a show host's attention in the studio or for communicating important information with staff during remote broadcasts.

WallTime interfaces directly with Axia Livewire GPIO and with standalone Ethernet GPIO devices. This allows status



inputs to be shared between multiple WallTime units throughout your facility without the need to install any additional wiring. The number of potential status input sources is virtually unlimited.

The WallTime unit is a microcomputer that attaches directly to the back of a standard computer monitor or television display. An HDMI input is required. For the best display resolution, use with a monitor capable of displaying a resolution of 1920x1080 (1080P).

WallTime's NTP synchronized clock is kept always in sync using Network Time Protocol (NTP). A WallTime purchase includes the WallTime device, power supply, HDMI cable and Velcro for attaching the unit to the back of your monitor.

The WallTime NTP Clock & Notification System from Paravel Systems will keep your staff informed and on time.



SOUND4

SOUND4 BIG VOICE² Three-Band Voice Processor

Two-Channel, Three-Band Processor, Dual Power Supply, Mic/Line/Digital/AES67

SOUND4 BIG VOICE² is available in two versions, same sound, different features...

SOUND4 BIG VOICE² — “Base version” Two-Channel

- Three-Band Processor
- Dual Power Supply — Mic/Line/Digital/AES-67 Inputs
- Line/Digital/AES-67 Outputs

SOUND4 BIG VOICE² — “Loaded version”

Base version with added features:

- Stackable Bus-Mix
- Front-panel recall
- Headphone...

SOUND4 BIG VOICE² is powered with the revolutionary HQ-Sound 192kHz Audio Processing engine, a SOUND4 patented technology, which has been used for years in other products. Its processing structure includes an advanced DeEsser, three-band noise gate, Pre-EQ four-band parametric, three-band dynamic processor, Post-EQ four-band parametric, brick wall limiter... Yes, much more than a simple noise gate and compressor and we don't stop there, Big Voice² products offer further enhancements with our own plug-in extensions like Reverb and more. SOUND4 BIG VOICE² processors are flexible, and adapt perfectly to all voices. From Natural tone to Big, everything is possible in a few clicks. The SOUND4 BIG VOICE² is the perfect tool for production studios for that smooth voice over.

Dominate-it... Let the lead talent LEAD!

SOUND4 BIG VOICE² includes the revolutionary “Dominate-It” function so the Lead talent is always the leader. This unique feature invented by SOUND4 gives priority to the main talent and will automatically back off guest mics when the main talent speaks. SOUND4 BIG VOICE² can even share the “Dominate-It” function with other BIG VOICE² processors to control other mics if needed!



Bus-Mix...

Auto-Mix all mics to one output and save fader space in consoles! The Bus-Mix function groups selected channel outputs to one physical output. This acts as an Auto-Mix function and is always protected from bus overloads. SOUND4 BIG VOICE² Base is limited to one bus-mix and is not shareable with other devices. SOUND4 BIG VOICE² Loaded offers four Bus-Mix shareable with several BIG VOICE² processors. You can then, for example, have 12 BIG VOICE² mic outputs grouped to one physical output, saving 11 faders on the console.

Preset Sharing...

SOUND4 BIG VOICE² Preset Sharing function, another SOUND4 invention, offers the ability to automatically share presets with other BIG VOICE² processors across the network. Presets modified in one studio are instantly updated in all other studios. This saves a considerable amount of time and ensures your carefully tuned sound stays consistent no matter which studio is in use.

www.sound4.com

STREAMS - MODULATION INDEX LLC

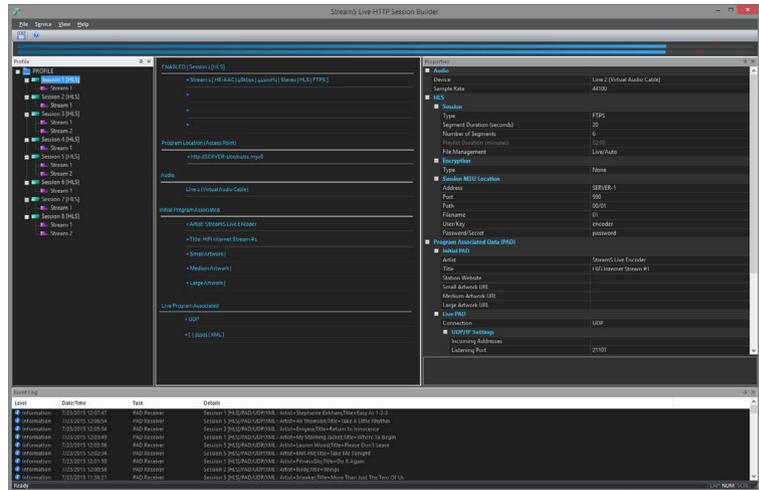
StreamS Live HLSdirect, xHE-AAC Encoder

The Marriage of a Transport HLS and the Coming Standard for Streaming Audio

In 2015, we won the Cool Stuff Award for our StreamS HLSdirect™ audio streaming encoders. The following year we became the first to license the new Fraunhofer xHE-AAC encoder. Now we have worked with Fraunhofer in bringing the new xHE-AAC codec together with our StreamS HLSdirect™ encoders.

StreamS HLSdirect™ with xHE-AAC gives broadcasters and pure-play internet programming providers unprecedented streaming audio quality while reducing operating cost. The layered bit-rate streams of HLS matched with the inherent adaptability of xHE-AAC provides seamless continuity of service, even on congested and remote mobile networks. The HTTP transport mechanism is nonproprietary, ubiquitous, robust and secure. StreamS HLSdirect™ xHE-AAC streaming audio technology operates with standard web servers and in cloud server instances, freeing streaming programming providers from the constraints of proprietary streaming servers and protocols.

Designed for speech and music transmission at bit rates as low as 16 kbs for stereo, MPEG xHE-AAC is the low bit-rate extension of the AAC audio codec, the worldwide industry standard for streaming, broadcast and music distribution. The coding efficiency of the xHE-AAC enables streaming services to operate at lower data rates, resulting in major benefits for consumers and content providers. The listening experience, especially for users of mobile devices, is improved by reducing buffering times and increasing stream reliability, while the lower bandwidth requirements reduce CDN costs for content providers. It also helps prevent data overflows for the consumer. In the same manner as HE-AAC has extended the reach of streaming audio to the mobile consumer, xHE-AAC will extend that reach to new emerging markets around the world that still rely on 2G networks. While capable of extremely low bit rates, at



slightly higher bit rates, it is identical in performance to HE-AACv2 and at 128 kbs and above, equal in performance to LC-AAC. xHE-AAC offers simplified player development. Since the decoders also support multi-channel AAC, it can also be used with the StreamS HLSdirect™ 5.1/7.1 surround encoders. Fraunhofer intends to make the xHE-AAC the next standard for audio streaming from basic speech to HD Streaming Audio.

StreamS HLSdirect™, using the new xHE-AAC codec, is the first step in starting a new standard as the people involved with StreamS did over 14 years ago with HE-AAC.

Both the StreamS iOS and AppleTV App have been updated to support the new xHE-AAC streams. Player SDK's will be released by Fraunhofer to help speed the adoption of the new encoder.

STUDIOCAST

StudioCast HD8 Auto IP

Smart Video Solutions for Radio

Studiocast offers turnkey video systems fully automated for your radio station. Make the video capture of your emissions or event easier, helped by an intelligent voice detector and analysis in real time. You can live stream your program 24/7 on the internet. Insert your on-air video templates and logo dynamically. You can accompany your video with RSS feeds, Twitter, Facebook and others...

- 1) Automatic Switching by voice detection every moment our automatic realization algorithms analyze the level of each microphones in the studio and select the best plan.
- 2) Insert graphic templates, texts, images, videos and logos dynamically. Easily add and edit a Title or ScoreBoard from the many built-in templates or build your own using any graphics or vector editing software. Adjust text, font size and color and real time with instant updates.
- 3) Live record in full HD to AVI, MP4, MPEG-2 or WMV, recording the final program with the ability of each camera recorded individually, for use in post production.
- 4) Interface for analog, digital and IP mixers Fader start/bidirectional logic interface with other mixers/audio interface with digital consoles. Optional, our StudioCast bridge for analog consoles.
- 5) Interaction with most automation systems interaction with most automation systems to trigger different graphics elements, automatic recordings or any other system function.
- 6) Remote Touch Interface for tablets HTML5/android/ios/start automatic or manual mode. Control all system functions from a pad or computer fingertip.
- 7) You can live stream your program 24/7 on the internet, live stream in H.264 to your favorite streaming providers including Facebook, You Tube, UStream, Dailymotion and Twitch.
- 8) PTZ Camera Control Save and recall the cameras positions. Piloting in RS and IP/Sony Visca protocol/Panasonic IP/Pelco-D/
- 9) Select Social Media content with any web browser. View a live Twitter feed based on Search, Home Timeline, User Timeline or Favorites; view Facebook comments, view Instagram Hashtags and User Timelines or view messages from any IRC chatroom. Content can be viewed and approved via any web browser including tablets and smartphones
- 10) All your inputs in one place

- *Video Cameras* — 4K-, HD- and SD-capable. Support for DeckLink, Intensity Pro, Webcams and more.
- *Video Files* — Support for all popular formats including AVI, MP4, H264, MPEG-2, WMV and QuickTime
- *DVDs* — With menu navigation
- *Audio Files* — MP3 and WAV
- *Audio Devices* — Mix multiple audio sources such as SoundCards and DeckLink Audio
- *Video and Audio PlayLists* — Combine multiple video and/or audio files into a single Input
- RTSP, PowerPoint, Photos, Flash, RTMP, Solid Colour and more.



New Features

The StudioCast video capture and production system offers new features. After the DHD and Axia protocols, the AEQ and Wheatstone protocols are now integrated into the StudioCast HD8 Auto IP.

This integration allows the StudioCast HD8 Auto IP to be interfaced via an Ethernet connection with the console, which provides logical and level information to enable automatic video realization.

In addition, the main function commands can now be directly assigned to keys or a touch screen on the console.

Finally, StudioCast supports audio protocols over IP/AES-67.

THE TELOS ALLIANCE

TVC-15 Watermark Analyzer and Monitor

Monitor and Analyze How Well Each Programming Element Supports Watermarking

Broadcasting is a numbers business. A broadcaster's success depends on what kind of audience they attract and hold. Audience size and composition is measured primarily by reports from private ratings agencies, and for most broadcasters, there's a direct link between those reports and a station's revenue. In electronically measured markets, having good tools — ones that help you understand the entire electronic measurement ecosystem — is essential to your station's competitive picture. With TVC-15, for the first time ever, you can detect, monitor and analyze how well each element in your programming supports watermarking. Measurements happen in real time, right off the air, without depending on or being connected to a particular encoder. Every 400 milliseconds, TVC-15's tone verification codec analyzes the actual code

symbols in any audio you feed it, whether yours or your competitors'. It will work from any source, live or recorded. A front-panel graph of your station's watermark density gives you a granular, moment-by-moment display; you can also download reports to look at encoding quality over hours, days and weeks.

And for stations with a Voltair watermark monitor and processor, you can use TVC-15 to automatically adjust enhancement levels in real time. TVC-15's Intelligent Adaptive

Enhancement [AE] closes the feedback loop, letting you dynamically control Voltair processing based on moment-by-moment analysis of your actual air signal, pushing enhancement when it is needed, while backing off when not. For more advanced watermark monitoring, TVC-15 lets you see what counts!



TelosAlliance.com/25-Seven/TVC-15-Watermark-Analyzer-Monitor

THE TELOS ALLIANCE

Omnia VOLT Audio Processor

Versatile, High-Performance Sound for FM, AM, SG, HD/DRM, Studio

Introducing Omnia VOLT. This versatile new broadcast audio processor features high-performance Omnia sound in just one rack unit. Using core technology with lineage from top-of-the-line Omnia products like the Omnia.11, VOLT features six AGC sections and a five-band limiter for sound that rivals the best processors on the market, while offering broadcasters format versatility and quick, easy tuning.

With VOLT, Omnia has rewritten all the rules for processing, and is delivering more processing power for louder, cleaner and more dynamic sound in one rack unit than others offer in two or even three rack units! We've packed our very best processing chops into VOLT for sound so incredible, so exciting, you won't believe it's emanating from 1RU.

It also has a fresh new industrial design that underscores a major leap forward in processing power.

Notable Omnia VOLT features include:

Incredible Audio — Omnia VOLT audio processor has a next-gen clipper designed by Frank Foti, along with a slew of features that create impeccable audio from only one rack unit. These include six separate

AGC sections; five time-aligned limiter sections; deep bass, warmth and stereo enhancers; and the best factory presets available.

QuickTweak — Omnia VOLT's new QuickTweak system distills years of processing knowledge and proven approaches from Omnia process-



ing pros into a simple set of controls that can turn anyone into an expert. Users can nail their signature sound in minutes whether using Omnia's advanced presets or their own settings, right from the VOLT's front panel or a PC.

Versatility — Using DSP|Core firmware, customers can alter the personality of VOLT to fit their changing needs and applications, whether it's FM, AM, HD/DRM or studio processing. VOLT can even be used as a standalone stereo generator. DSP|Cores aren't extra-cost add-ons. Users simply download the functionality they need for free, install the DSP|Core firmware package from a connected computer and reboot.



TelosAlliance.com/Volt

THE TELOS ALLIANCE

Axia IP-Tablet

Your Most-Used Console Functions, Right at Your Fingertips!

When you use Axia gear, you are part of a growing, innovation-driven ecosystem — not locked into one console company's vision of the future. Part of Axia's innovation is thanks to the creativity of its more than 100 Livewire partners. Witness the latest from Axia, the award-winning IP-Tablet designed by Livewire partner IP-Studio.

This one-of-a-kind product removes cumbersome and sight-blocking monitors from the studio by moving the monitoring and control of your gear to a smaller, conveniently mounted touchscreen. IP-Tablet runs on a Windows tablet — anything from a low-cost Asus model to a high-end Microsoft Surface, where display sizes range from handheld to wall-sized.

Customize the layout and control of Axia console displays. Choose from one of the pre-designed templates, or through the simple drag-and-drop design interface, design a layout that is specific to your needs containing

features like VU Meters, Timers, Time and Date Display, Status of On-Air, Preview and Talkback, the ability to change fader sources and console profiles, full control of on-board virtual mixing with faders and more.

The IP-Tablet also allows you to manage user rights for device access, linking a user's profile to his or her needs. You can mount the Axia IP-Tablet right into your Fusion console with a beautifully machined, completely flush IP-Tablet module or externally. Adding great value to your Axia console purchase, the IP-Tablet puts your most used console functions right at your fingertips!



telosalliance.com/Axia/ip-tablet

TRILITHIC INC.

EASyCAP B3030 EAS Encoder/Decoder

One-Box Integrated Solution for EAS and CAP

The EASyCAP B3030 is the most affordable, most capable and easiest to use Emergency Alert System (EAS) available.

It offers the most standard features of any Emergency Alert System on the market. The EASyCAP B3030 not only handles all of today's EAS requirements, but provides a flexible and expandable platform designed to accommodate future requirements and additional features.

The EASyCAP B3030 is in compliance with all of the IPAWS CAP standards. The EASyCAP B3030 allows multiple sources to be configured for receiving CAP alerts.

- Four baseband audio inputs
- Text to Speech
- Spanish language support
- CAP message processing
- Email reports and status updates
- Full three-year warranty
- Complimentary telephone support

*Product will be ready for shipping in June 2017

**Image is a prototype of the EASyCAP B3030

Standard Features on the EASyCAP B3030 consist of:

- Touchscreen front panel, which gives instant information of source status, current EAS operational status, ability to abort alerts in progress, initiate an RWT, and provides a simple way to initially gain access to the web interface.
- Three internal AM/FM/NOAA tuners



eas.trilithic.com/

WHEATSTONE CORP.

PR&E DMX Audio Console

New IP-Networked Digital Audio Control Surface

Following the acquisition of PR&E in February, Wheatstone introduced the new PR&E DMX console line — a complete standalone studio system with console surface and IP audio networking. The DMX carries forward PR&E's rugged quality and practical functionality, but adds IP audio routing to the mix. It is ideal for a two- or three-studio facility where each location can operate independently as a standalone entity, but with all studios linked together through an IP network.

The DMX AoIP network system is all-inclusive without the need for an external Ethernet switch. It has 1 GB connectivity and integrates easily with most existing radio automation systems. Available in eight or 16 fader mainframes, the DMX has four program busses with bus-minus on every fader. An encoder knob on each channel adjusts PAN, MODE and input SOURCES. The console has talkback and cue functions, EQ/dynamics, control room, studio and headphone monitors, LED metering, built-in timer and four-event recall. The surface uses a 1RU DMX Mix Engine and 1RU Razor I/O module, which can handle 8x8 stereo (16 mono), 6 LIO logic ports and 1 GB Ethernet.



wheatstone.com/radio-products1/radio-consoles/pr-e-overview

WHEATSTONE CORP.

AirAura X4 Digital Spectral Processor

New Dual Touchscreen Top-of-the-Line Multi-Band Audio Processor

Wheatstone’s new FM and HD audio processor has been designed from the ground up based on several technical breakthroughs, including a new interacting system where all stages of processing are aware of each other. In traditional designs different processing stages are created to complement each other, but not all information between stages is shared. The AirAura X4 breaks down that wall and allows the processor to share information between *all* stages. “Our SST and original iAGC algorithms were a doorway into this, where the processor would share information in the front end about who was doing what. Now the iAGC, limiters *and* clipper all share this information, and changes can be made automatically, in real time, in ways never envisioned before,” commented Jeff Keith, product development engineer for Wheatstone processing.

Like its AirAura X3 predecessor, the X4 includes 31-band limiting, but utilizes it working directly with the X4 clipper, providing an audio blue-

print for how the clipper should behave. Incorporating the limiter with the clipper is a major step forward for transparent loudness. With both front- and back-end processing working in concert, the need to make loudness compromises is significantly diminished.

The AirAura X4 includes a redesigned bass processor, enhanced controls in the iAGC, and full RDS capabilities. It includes Wheatstone’s HD/FM audio alignment, which works either with third-party modulation monitors or by itself through the FM/HD tuner built into the unit. AES insert points let customers insert ratings encoders into the processing system instead of before it. This allows the X4’s iAGC to operate ahead of the encoder instead of through an outboard leveler.

Popular features of previous models have been incorporated as well, including improved multipath mitigation, redesigned composite processing with selectable lookahead limiting/clipping, baseband192 composite AES connectivity, and a full set of analysis displays.



wheatstone.com/audio-processing

WHEATSTONE CORP.

VoxPro7

Latest Model Live Radio Audio Recorder/Editor/Playback System

This latest version of VoxPro’s purpose-built editor/recorder for live radio now has signal processing to let talent quickly clean up phone calls for on-air presentation. This dynamic and EQ toolset includes parametric EQ, de-esser, compressor, expander, limiter and noise gate for processing call-in and talent tracks independently or jointly. It comes with a standard library of presets.

Also included with VoxPro7 — the new FX Macros for creating one-button presets to instantly call up frequently used effects. FX Macros can trigger one or a chain of actions — for example, start by removing silences in a call-in using VoxPro’s GapBuster (which now automatically detects noise floor), then running the result through Dynamics and EQ, and finally normalizing both host and caller channels for final broadcast — all with the push of a single button.

VoxPro7 has also streamlined the system’s effects menu, making effects like chorus, reverb and distortion more easily accessible and rendering recent settings “sticky” for faster recall. Improved file navigation with a QuickSearch box and the ability to color-code files and hotkeys make resources much easier to locate in long lists of items.

Other new features include support for 24-bit files and a new animated display.

“This latest version is all about audio quality and being able to do more in less time,” says Rick Bidlack, lead engineer for VoxPro.

VoxPro7 is available immediately as an upgrade to existing VoxPro versions in the field.



wheatstone.com/voxpro-recorder-editor/voxpro-system

WIDEORBIT

WO Programmatic Digital Audio Ad Market

An Automated Solution for Maximizing the Value of Streaming Audiences

By combining WideOrbit’s WO Streaming digital audio management system with its leading WO Programmatic platform, WO Programmatic Digital Audio enables publishers and broadcasters to tap into additional revenue through programmatic channels. Publishers can easily automate transactions and access new demand sources while maintaining full control of their ad inventory and visibility to advertisers.

Adding programmatic buying to a broadcaster’s direct sales and Ad Network efforts delivers revenue from unsold inventory. Programmatic provides an additional revenue stream and inventory can be more easily discovered by top agencies.

Key benefits for digital audio streamers:

- Generate new demand and competition for ad inventory
- Optimize yields with user-level dynamic floor pricing
- Deliver ads at the right time to the right audience with precision targeting
- Grow ad dollars from unsold inventory

Easy to execute — one platform

- Streamline creative and billing with automated transactions
- Compare offers across programmatic and direct
- Consolidates invoicing across direct, ad network and programmatic ad sales
- Open standards: DAAST, VAST, OpenRTB



- Simple to get started
- WO Streaming integration

Maintain full control of ad inventory and pricing

- Deliver buyer and audience viewable data
- Discover new advertisers for direct sales
- Define blacklists for category and advertiser
- Monitor and price inventory according to demand

WORLDCAST SYSTEMS

SOLAR FM RETRANSMITTER

New, Fully Featured Solar-Powered FM Retransmitter

What is it? Designed specifically for outdoor operation in areas with limited electrical infrastructure or for temporary installations, the SOLAR FM RETRANSMITTER can receive audio from a number of different sources and rebroadcast it across a 10 km area. Using solar-power alone, the system can operate for up to 10 hours per day and this can be extended further as the SOLAR FM is a hybrid system also providing AC power.

What is included? The SOLAR FM RETRANSMITTER is supplied as a turnkey package incorporating all the antennas required for operation. This includes reception and transmission antennas with cables and a satellite antenna or dish as required.

The system can receive audio directly from its analog and AES inputs or via the built-in FM receiver or DVB-S/S2 satellite receiver.

The solar energy source comprises a solar panel, NiMH and its battery management system and an AC power supply is also included.

How is it controlled? With the proliferation of smartphone devices and the desire to minimize power consumption, the SOLAR FM RETRANSMITTER has been designed to be controlled via a mobile application. A low-consumption Access Point WiFi module enables easy, outdoor communication with the system.

Using the mobile app, the user can fully configure the transmitter



itself, the built-in satellite receiver and FM receiver using the mobile app. The app also allows the user to schedule the operating times of the transmitter, provides an overview of real-time status and enables monitoring of parameters such as preamplifier power, the current/voltage for each power source, etc.

What are the applications? When deployed in optimum sunlit conditions, the SOLAR FM RETRANSMITTER can provide up to 10 hours of uninterrupted broadcast with no need for on-site electricity.

By using AC power as backup when solar energy is not available, the SOLAR FM RETRANSMITTER can operate 24/7 without interruption. Given the negligible operational cost of solar power, this hybrid capability ensures that expenditure is minimized with no impact on the broadcast.

As well as electrical switching, the system also provides the ability to schedule the audio source as required. Users can schedule the audio input to switch from the satellite to FM receiver or to the analog and AES inputs to playout the content required at the specified time.

The SOLAR FM RETRANSMITTER has been designed to be versatile, easy to mount and highly resilient to difficult operating environments, making it ideal for deployment to deliver FM content in isolated communities, disaster recovery areas or at any large crowd events.



www.worldcastsystems.com/en/c11p100/low-power-fm-transmitters/solar-fm-retransmitter

WORLDCAST SYSTEMS

WorldCast MANAGER Server

New Multi-Vendor NMS Software

New multi-vendor NMS software, WorldCast MANAGER Server, provides real-time and recorded monitoring of all devices in a network.

What is it? WorldCast MANAGER Server is a new multi-vendor NMS software solution, designed specifically for the broadcast, satellite and telco industries.

Installed on a powerful data server, this global network monitoring solution can link a wide network of SNMP-enabled devices across multiple locations and provides the user with a clean, modern and integrated interface for control.

The WorldCast MANAGER Server is a significant advancement on the previously launched PC application, the WorldCast MANAGER Desktop, which offers real-time information and status on the network.

The WorldCast MANAGER Server adds measurement logs, history, alarm notifications via emails and SMS and much more.

How does it work? WorldCast MANAGER has been designed as a vendor-agnostic solution; it works not only with WorldCast Systems' own products but with any SNMP-enabled device, meaning it can be deployed to monitor an entire broadcast site or even multiple sites.

Legacy equipment that does not offer SNMP can also be managed using a product such as the Audemat Control, which acts as a local hub enabling the WorldCast MANAGER to interface with the legacy device.

All units across the network can be easily and automatically added to the system with the WorldCast MANAGER Server's network discovery functionality. Then, there is an existing library of MIB files from many leading broadcast manufacturers to enable effortless configuration. If a user wishes to control equipment not currently included in the library, WorldCast Systems can provide a driver creation service at no cost to the user.

Once configured, the WorldCast MANAGER Server provides the ability to view the status of an entire network on a single screen. A map-based view enables visualization of network status across various different locations.

In addition to real-time performance status, the WorldCast MANAGER Server also logs measurements and events to provide the user with highly detailed historical data for analysis.

Should a fault occur on the network, the user can configure the triggered response according to the severity of the alarm. Nominated users will receive alarms by email or by SMS and, logging in to the World-

Cast MANAGER Server, they can identify the unit where the fault has originated and launch the user interface of that unit directly from the WorldCast MANAGER screen.

Many of the software screens are compatible with mobile devices so an engineer can check the network status on a smartphone at any time or place (with an internet connection.)

Subscription Model — WorldCast MANAGER Server is available as a subscription service and can be bundled with a service contract offering free access to all new software and feature updates and comprehensive training and technical support. The license cost, renewable annually, varies according to the number of units supported by the WorldCast MANAGER Server.



Key Advantages

- Vendor-agnostic so it can be used with all units in your network
- Designed specifically for broadcast and includes MIB files from many leading broadcast manufacturers
- Automatic monitoring configuration based on network discovery
- Strong emphasis on design of the interface to ensure intuitive, simple and clean
- 24/7 data tracking and access
- Instant alarm notification via SMS or email
- One-click access to web-based control interfaces
- Ability to group site and grant different user access levels and permissions
- Views compatible with smartphones and mobile devices

www.worldcastsystems.com/en/c46p95/network-management/worldcast-manager-server

BROADCAST BIONICS

Skype TX for Radio

Radio's Answer to Skype

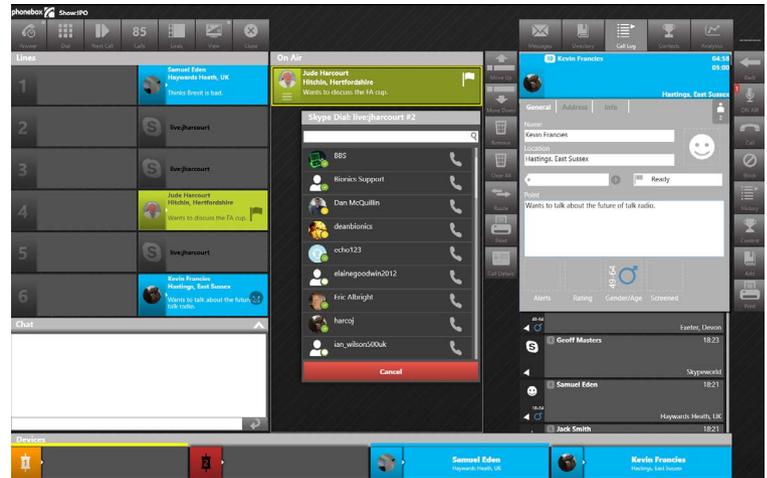
Broadcast Bionics has been working in partnership with Microsoft to develop a solution fitting Skype calls into the demanding workflow of radio broadcasters. The result is Skype TX for Radio, a real game-changer in audio quality, cost and simplicity of operation for talk radio, remote hosts, guests and reporters in the field. Transforming the way broadcasters make and receive Skype calls in the studio and integrating Skype seamlessly alongside traditional phone calls, SMS and social media.

For the first time, radio stations can deliver full multiline talkshow and contest formats using Skype. With multiple, codec-quality calls, all from a single PC. In fact, Skype TX for Radio delivers up to 16 lines from a single Skype TX for Radio server (or virtual machine), making the system highly affordable and hugely scalable.

Stations have access to millions of global Skype users who can all make codec quality contributions directly from their mobile phone, desktop or web browser. Skype TX for Radio opens new interactive possibilities for developing countries, enables a single point of contact for global broadcasters and allows interaction with podcast/streaming stations without access to traditional phone lines.

Skype TX for Radio can even accept traditional phone calls without a phone line for Skype accounts with a Skype number. Skype TX for Radio is seamlessly integrated alongside existing radio workflows through the PhoneBOX4 user interface. PhoneBOX4 combines Skype calls with traditional phone lines as well as SMS and social media.

Skype TX for Radio integrates access to the full Skype directory and search functionality into PhoneBOX4 as well as adding PhoneBOX4's caller history, analytics, visual talkback and recording functionality to Skype calls. Call details and even the Skype avatars can all be displayed



on Virtual Director, so streaming video and content shared on Facebook and Twitter becomes even more compelling.

Using Skype TX for Radio, reporters can contribute immediately to update rapidly changing situations, sports commentary or results, without the need for taking specialist broadcast hardware into the field. Skype TX for Radio has the capacity to allow Skype to be included in the call for action in talkshows and contests. Accepting up to 14 calls per Skype account and supporting multiple Skype accounts, lines and devices. Offering a high-quality way to accept, answer and screen high volumes of calls.

For high-quality audio, from anywhere in the world, Skype TX for Radio is the answer.

DEVA BROADCAST

DB4402

High-Performance Dual FM Monitoring Receiver and Radio Streamer

The DB4402 — Dual FM Monitoring Receiver is a superb and highly practical combination between a logger and a streamer which allows

you to easily and accurately monitor and store all important parameters of the FM signal while simultaneously giving you the opportunity to listen to a constant, uninterrupted audio stream. The synchronized performance of both major functions is at the core of the idea for this model, as well as the unit's major asset. You can listen to the selected audio feed at the same time as the logger campaign is running. The design of this device relies on simplicity coupled with functionality to offer customers the opportunity of a single solution to both tasks.

Providing the stable, dependable operation characterizing all DEVA products, the DB4402 is fully DSP-based, with a built-in oscilloscope and an RDS/RBDS decoder with a BER meter. It also permits users to set alarms for RF, MPX, Pilot and RDS signal via email, SMS or SNMP. What is more, the TCP/IP and GSM connectivity provides easy remote control, monitoring and listening to the radio signal from any location.

The device offers a "Restore Factory Defaults" option and easy update of the firmware. It is an advanced solution giving customers a number of advantages and top all-round, multi-faceted performance as both a monitoring tool and a streaming device.

Features:

- Fully DSP-based core
- Built-in oscilloscope allowing Left, Right and MPX display
- MPX Power measurement with data history
- RF spectrum analyzer allowing to check the RF carrier parameters
- MPX spectrum analyzer for Left, Right and MPX measurements



- Selectable De-emphasis — 50 μ s and 75 μ s
- Built-in stereo decoder; stereo presence detection
- Date and Time settings with various formats
- LAN port for full TCP/IP remote control and monitoring
- Up to 90 dB μ V direct RF antenna input
- Adjustable alarms for RF, Deviation, Pilot and RDS signal
- Firmware update for future-proof operation
- Parameters Factory Restore option
- FM Band 87–108 MHz basic spectrum analyzer
- MPX, PILOT and RDS deviation meters
- Left and Right demodulated audio level meters
- Headphones audio output
- RDS and RBDS decoder with BER meter
- Intuitive application interface
- Alarm dispatch via email, SMS, SNMP
- Channel-status reporting via SMS
- RF and RDS measurements
- Remote listening via optional GSM modem
- Real-time audio program streaming
- Attractive price and very good price-performance ratio
- Very intuitive embedded WEB server for interactive supervision
- Proved and reliable hardware for 24/7/365 operating
- Easy installation and setup
- SNTP for automatic synchronization of the built-in clock
- Compact and robust aluminum case for high RF immunity

www.deva-fm-monitoring.com/products/db4402#description

GATESAIR

Intraplex IP Link MPXp

Optimizes Bandwidth for AES192 and Analog Composite Signals Over IP

The GatesAir Intraplex IP Link MPXp is the industry's first professional codec to support AES192 digital and analog composite signals over a secure and reliable digital IP path in the same solution. IP Link MPXp codecs provide flexible sampling rates (16, 20 and 24 bits) and sample size options to optimize IP network bandwidth utilization based on the FM services being transported. With its unique built-in bandwidth reduction technology and signal parameter selection, broadcasters can transport uncompressed AES192 signals as low as 1.8 Mbps — a more than 50-percent reduction in bandwidth utilization compared to most codecs on the market. This exceptional bandwidth efficiency opens more headroom for increased packet protection, as well as additional audio and data services.

The IP Link MPXp codec offers a strong value proposition as a feature-rich, future-proof codec to support analog composite transport today

— and AES192 composite transport when the broadcaster upgrades from an analog to a digital exciter. However, its flexible dual-domain capability allows the broadcaster to install a newer audio processor supporting AES192 and have it interoperate with an exciter supporting only analog composite signal interface today. This not only provides a transitional path for a digital exciter upgrade, but also enhances signal quality by keeping it in the digital domain across the IP path.

Like previous-generation IP Link codecs, the Intraplex IP Link MPXp codec also simplifies network architectures and maintenance to reduce capital and operational expense. As wide-area network pipes grow larger, the Intraplex IP Link MPXp codec enables broadcasters to aggregate all FM processing equipment at the headend. Meanwhile, advanced security measures protect the broadcaster's signal thanks to the codec's integrated firewall.

The IP Link MPXp codec additionally offers the same extensive feature set as other IP Link codecs. This includes GatesAir's unique dynamic stream

splicing technology with time and network diversity at the streaming layer to mitigate IP packet loss and eliminate off-air time. Other common IP Link codec features in the MPXp including multiple input and output ports for signal redundancy, decoding of audio and RDS content from either the input or output signal, and the option to incorporate external SCA subcarrier signals into the output signal. Its integrated RDS decoder further reduces equipment costs for the broadcaster who was previously forced to install expensive outboard boxes to support RDS.

IP Link MPXp codecs are suitable for use in IP-based Studio-to-Transmitter Links (STLs) as well as distribution networks. Support for IP multicast and multiple unicast streams enables one encoder to feed



multiple decoders. By incorporating three IP interfaces that can be used for streaming and management, the IP Link MPXp system can provide a level of reliability not seen in comparably-priced codecs. At the hardware level, the N+1 redundancy with built-in control for both MPX routers and data switches provides automatic synchronization of configuration and switch over capability. This reliability is further enhanced with optional hot-standby power supply.

The IP Link MPXp also includes programmable RTP-level forward error correction and interleaving to bring additional protection against burst packet losses. A convenient graphical front-panel user interface and comprehensive web browser interface makes the IP Link MPXp easy to monitor, configure and operate. When coupled with Intraplex LiveLook software, users enjoy enhanced visibility into network performance through advanced network analytics, monitoring and troubleshooting capabilities. Additionally, optional Intraplex SynchroCast capability to dynamically align the playback of the MPX signal at geographically dispersed transmitter sites for single-frequency network (SFN) broadcasting.



www.gatesair.com/products/transport/audio-contribution-distribution/intraplex-ip-link-mpxp

HENRY ENGINEERING

Systems Alert Monitor ('SAM')

Off the Air? No Audio? SAM Lets You Know Now!

The Systems Alert Monitor is a versatile “watchdog” that monitors the equipment and systems of a typical broadcast facility. SAM provides an instant visual, audible and email indication if any-

thing goes wrong or needs attention by station personnel.

SAM monitors up to 15 status inputs from station equipment. When a fault is detected, SAM generates an “Alert” text message that is displayed on a video monitor. SAM’s Alert messages could indicate equipment failure or other important conditions, for example OFF AIR, NO AUDIO, EAS ALERT, HIGH SWR, etc.

SAM can also detect a ringing phone line, e.g., REQUEST LINE, HOT LINE, etc.

In addition to visual Alert messages, audible alerts and email notifications can also be sent.

SAM’s video monitor can be installed in a studio, engineering shop or anywhere personnel need to monitor the station’s status.

Any HDMI video monitor can be used, and SAM’s visual alerts can also be remotely monitored via the station’s LAN. Up to 15 status conditions can be simultaneously monitored by SAM.

SAM’s Setup screen allows the user to easily customize and change the Alert message text, color and display time.

Audio alerts and email alerts can also be programmed by the user, and updated as needs and equipment change.



INOVONICS INC.

NOVIA 272 FM Stereo Audio Processor

A Comprehensive FM Airchain Processor With StereoGen and RDS Encoder

The Inovonics NOVIA series offers a compact and economical solution to a host of broadcast audio processing requirements.

The NOVIA 272 is a comprehensive FM airchain processor and includes the stereo-multiplex generator and a full-function dynamic RDS/RBDS RadioData encoder.

Processing combines “gain-riding” AGC, r.m.s. leveling, parametric EQ, enhanced bass “punch,” multiband compression, wideband and independent high-frequency final limiting and composite clipping.

The internal RDS/RBDS encoder is compatible with common playout systems to present dynamic song title and artist information.

In addition to quick and easy front-panel setup, an IP interface enables total remote control of the NOVIA 272 using any PC or mobile device. This interface also accepts streamed program sources, allows remote audio monitoring and provides full SNMP support.

Program audio failure alarms trigger local tally closures and instantly dispatch SMS/email notifications to selected personnel. Alarms are also logged for later analysis.

Setup and operation are simplified with 10 factory processing presets, and 10 additional presets may be user-defined. An internal scheduler is included for dayparting



Features:

- Gated and “windowed” gain-riding AGC
- Unique, adjustable “syllabic leveling”
- Three bands of dynamic compression with selectable crossovers
- Four sections of parametric EQ plus an effective “Bass Punch” feature
- Independent “Density” and “Smooth/Loud” adjustments
- GPIOs, web/email/SNMP for controls and alarms
- Built-in real-time clock and headphone jack
- Analog, AES-digital, streaming in; MPX/streaming out
- Complies with North American and European standards
- Adaptable HF limiting and variable composite processing
- Built-in RDS/RBDS; compatible with all automation
- Full function “responsive” web interface works on desktop and mobile devices

www.inovonicsbroadcast.com/model/272

LOGITEK ELECTRONIC SYSTEMS

Helix Radio Digital Console

A New Approach to Radio Console Operation

Helix Radio represents a new approach to the operation of broadcast consoles. It incorporates the latest multitouch technology along with a suite of familiar controls to offer easy, yet fully customizable operation.

The world has become accustomed to the use of touchscreens. Whether they are in your mobile phone, on a tablet or part of your automation system, touch devices have become the norm for running applications and making menu choices. Younger operators at your station have literally grown up with these devices. Logitek's Helix Radio combines the best of the multi-touch world — offering simple menu selection and easy screen operation — with the convenience and easy operation of traditional controls such as large physical buttons and smooth faders. The result is a console built for the “touch generation,” but with easily accessed physical controls that your experienced operators will demand.

Helix Radio is available in sizes ranging from six to 24 faders (fader layers are available for system expansion as needed). Each Helix console includes a Monitor module and an HDMI output, which allows for connection of a separate touchscreen meter or control bridge. Modules can be mounted in a single or split desktop frame. Touch-sensitive faders are motorized for seamless integration with automation systems; they will also automatically track settings made by operators who are running the system remotely. Each Fader module in Helix Radio contains a 7-inch IPS touchscreen which provides context-sensitive function access; six

motorized faders with touch-sensitive fader caps; large ON and OFF buttons with LED RGB-assignable colors; bus assignment for Program and four to eight AUX busses; and direct access to CUE. Metering indication for each fader appears above the fader on the touchscreen panel.

The Monitor module also contains a 7-inch IPS touchscreen with context-sensitive function access; volume faders for Monitor and CUE; a CUE volume control knob; Studio/Guest volume control knob; four hotkeys for main monitoring functions and integrated profanity delay control with a large “dump” button. Program metering appears on the touchscreen panel, along with delay status and other information. Powered by Logitek's JetStream AoIP platform, Helix Radio offers all of the functionality needed for smooth, efficient operation. 24

mix-minus busses are available, which automatically track their assigned sources, no matter where those sources appear on the console. The JetNet interface available in the JetStream provides a direct interface to automation systems, allowing those systems to operate the console without the use of a separate sound card.

Helix can be controlled from the road by your talent. Using the new vMix Touch application, operators at remotes can take control of the console to operate their own faders, activate equipment and select functions as needed. vMix Touch can also reside in the studio, presenting large easy-to-read meters, router controls, virtual faders and other functions on a standard touchscreen display in the studio. With Helix Radio, “Console Meets App.”



NAUTEL LTD.

HD Radio SFN

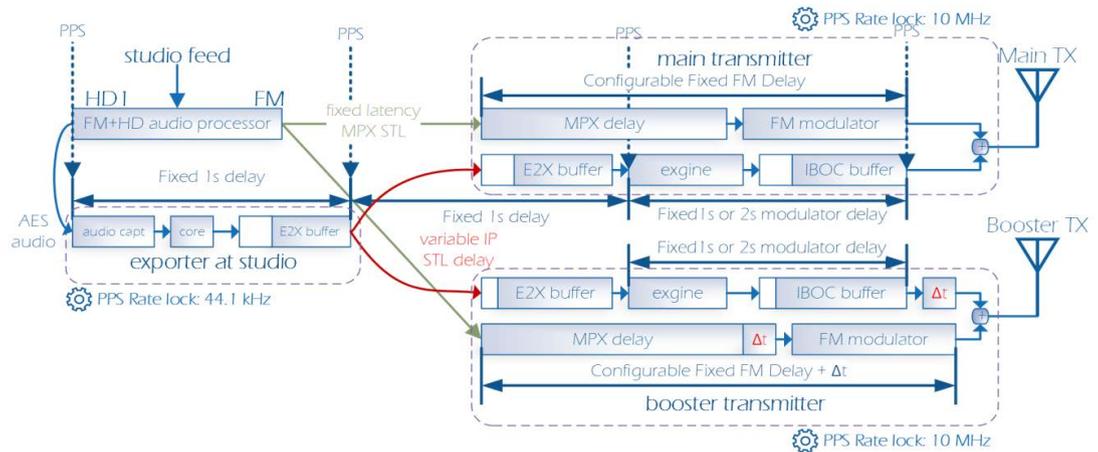
Seamless Single Frequency Networks for HD Radio

Many broadcasters face challenges in serving listeners located in obscured areas, such as behind mountains. Traditional analog single frequency networks (SFN) approaches can create overlapping coverage and result in poor to unacceptable reception. Nautel's HD Radio SFN solution enables two or more transmitters to work together to provide excellent coverage throughout a region. Nautel has developed a way to provide seamless transition from one coverage area to the next for HD Radio transmission. The technical approach gives broadcasters new options for reaching listeners in challenging locations. Nautel's HD Radio SFN has been proven in field trials at KUSC, just north of Los Angeles.

Specific advantages of the approach include:

- a hybrid FM+IBOC booster installation that minimizes on-channel interference -tight time synchronization between all nodes of the SFN for both FM and IBOC.
- a method to achieve precise input to output time synchronization for In-Band-On-Channel (IBOC) signal transmission across multiple HD Radio transmitters
- seamless hand-off from one transmitter to the next

Additional detail: Digital radio transmission SFNs can be employed to help broadcasters improve coverage. Successful radio broadcasting requires that numerous listeners are reached with the best possible signal in the most cost effective way. Typically, this is best achieved by maximizing the radiated power of a single transmitter site. However, there are cases where it is not practical for a station to extend its



SYNCHRONIZED IBOC SYSTEM ARCHITECTURE

coverage and listenership with a single transmitter approach. While an SFN of multiple analog FM transmitters on the same channel can address these cases, interference will always degrade the analog FM audio quality and can at best be minimized. Digital radio transmission, on the other hand, maintains good audio quality unless the signal is lost entirely. Broadcasters can achieve seamless HD Radio transmission hand-off from one transmitter to the next provided the engineering guidelines are observed.

Digital radio transmission in the form of In-Band On-Channel (IBOC) or other orthogonal frequency division multiplexing (OFDM) standards are ideally suited for the following application areas.

- Fill-in FM Booster Stations
- Micro Boosters
- Roadway Coverage
- Wide Area Coverage
- All Digital HD Radio SFN

Nautel has successfully demonstrated an IBOC SFN implementation at KUSC, Los Angeles, that showed that IBOC coverage extension is possible even in difficult mountainous terrain.



NAUTEL LTD.

HD MultiCast+ Importer/Exporter

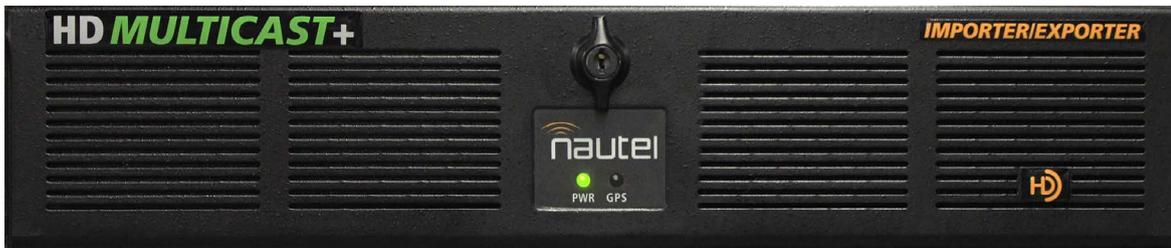
Affordable, High-Performance HD Radio Multicast System

Nautel HD MultiCast+ is for radio stations wanting the simplest, affordable system to let their listeners enjoy HD Radio. The all-in-one solution reduces complexity and cost, and is built on a high-performance, extensible 2RU platform. Features include multichannel audio card, GPS receiver, and Nautel Reliable HD Transport*. Station logo support is planned for a future release.

HD MultiCast+ leads the way with radical cost reduction, simplicity, and long term investment protection for radio stations. It aggressively

promotes HD Radio, further enabling the industry to drive digital radio as a standard that everyone can enjoy.

HD MultiCast+ platform can be operated in all-in-one mode or as Importer or Exporter, allowing operators to match it to their specific studio-transmitter site topology. The Importer codes the secondary program services of an IBOC transmission, which can include digital channels HD2, HD3, HD4 and data services. The Exporter combines the digital version of the main audio stream, HD1, with the secondary audio and data services from the Importer.



**Nautel Reliable HD Transport: an award-winning tool that reduces the bandwidth requirement and enhances the reliability of the exporter to excite data connections.*

www.nautel.com/solutions/digital-radio/hd-radio/

NEXTRADIO

Dial Report Broadcast Radio Insights

The Largest Over-the-Air Radio Delivery and Measurement Source

Dial Report is unique and there is nothing else like it serving the radio industry.

Dial Report measures broadcast radio, feed from the NextRadio app, and delivers the insights found in digital advertising channels. It is the point of access to the largest source of processed data on FM radio consumption and behavior. We are changing the way advertisers, broadcasters, record labels and data companies acquire and use radio listener insights by delivering granular, near real-time radio listener data that allows for smarter targeting and faster optimization.

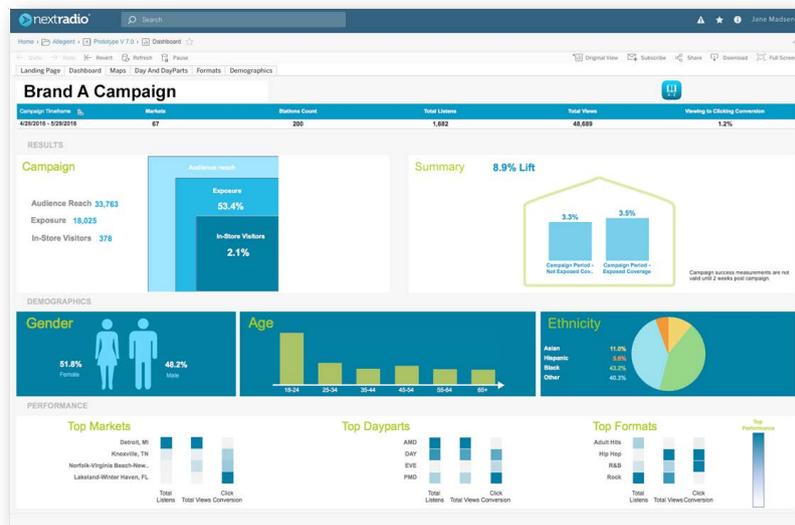
It provides Campaign Analytics mid-flight and at the end of a campaign outlining for brands the number of listeners and viewers, top formats, top stations, demographic information on listeners, in-store visits, interactions plus much more. It also provides Listener Intelligence with insights on reach, sessions, market population, AQH by person and rating and CUME by person and rating.

And last it gives access to Content Intelligence focusing on reach, listening sessions, total listening time and insights into social media impact from the campaign.

Here are some examples of the possibilities this data can provide: Allow for local radio measurement to demonstrate direct correlations between a radio campaign and real world behaviors such as physical store visits? Or perhaps identify the targeted demographic profile

of the entire listening audience in the exact moment when an advertiser's campaign aired on every intended station, whether broadcast or streamed? Going deeper, consider any form of content, commercials, music, talk shows or promotions, and every moment of radio measured and aligned with online or physical world behavior. A morning show could demonstrate that their mentions and adoration for a brand resulted in online or social media activity, and possibly even phone calls or visits to a brick and mortar.

New song spins could be analyzed down to every single radio station that played the song and the exact profile of the audience who listened perfectly (start to finish) or left mid-song for a new station. The same music audience might tell a record label or event management company where to find the listening audience most likely to fill a venue on the concert tour. While one would not expect a particular format to change their political slant on programming, data analysis of talk shows could indicate the real-world behavior of listeners at a moment in time or over a longer period of listening. All of this can be accomplished with the Dial Report and much more. It is time radio provides big data and campaign insights in a real-time format that can help agencies, brands, etc. maximize the power of radio's consumer reach and confirm the ROI on their spend.



ORBITAL MEDIA NETWORKS INC.

OmniStreamer Two-Path HLS Audio Receiver

Balanced Professional Audio, S&F Features, Eight Relays, Fixed Latency, AAC

The OMNiStreamer platform is a full-featured network distribution system that includes advanced capabilities and control only available previously using expensive head-end gear and satellite receivers.

The OMNiStreamer receiver is a dual network-path HLS or RTP audio appliance, delivering contribution-grade audio, reliably over public internet, corporate WAN, or local network. While C-Band satellite distribution may be the pinnacle of reliable real-time content delivery, the large antennas, high cost of bandwidth, and expensive proprietary head-end gear can make this model cost-prohibitive to smaller broadcast networks.

Private point-to-point networks can be cost-effective for a very limited number of affiliates, but quickly become more expensive than satellite distribution when the network grows.

Previously available public internet distribution systems have been plagued by congestion issues including audio glitches, long programming interruptions and unsynchronized playout across multiple affiliates.

These “solutions” also suffer from the use of cobbled-together consumer grade hardware, making for low-quality audio and a severe lack of professional features.

OMNiStreamer answers yes to dual-network paths for reliable connections, Store & Forward features like regionalized spot insertion for better monetization, automation control relays, PAD Data pass-through, the highest-quality Fraunhofer AAC LC and HE audio, scheduled program playback and local content playout all at a very attractive price-point.

Syndication-grade audio quality and a full feature-set drove the design of the OMNiStreamer.

Pluggable Phoenix™ connectors provide pro-level, balanced audio (optional AES3), and 8 N.O. relay closures. PAD and other ancillary data is passed by UDP and old-fashioned serial delivery.

A host of other features will make you wonder how so much capability could also be so affordable, with a quantity one list price of \$799.

The platform’s dual internet path support, innovative error-correction and path-length accommodation algorithms dramatically reduce the effects of public internet congestion — dramati-

cally reducing audio glitches and dropouts while providing distribution to a large number of affiliates that remains synchronized network-wide, even across the challenges and uncertainty of the public internet.

Cues and commands from the content server remain tightly synchronized with program audio.

OMNiStreamer says *no* to on-air trainwrecks.



The OMNiStreamer supports network control of program authorizations, triggering and playback of local content, optocoupled logic inputs for local control, and multi-level access control for the built-in web interface.

The OMNiStream Server software runs on a standard Linux server, and ingests multiple audio streams from off-the-shelf audio interfaces.

Control and command cues as well as PAD data is received by UDP, from your favorite automation system or our UDP-32 encoder.

Orbital Media Networks offers competitive hosting for origination or relay of your programming, through our hardened data center in Englewood, Colo.

The Orbital Media Networks Data Center is secure, manned 24/7/365, has multiple redundancies for power, and connectivity to disparate internet providers via multiple fiber and copper entrances.

Once owned by a major radio group, we’ve been in business since 1985, providing satellite and IP services to broadcasters and other businesses, and disaster recovery communications to first responders, energy companies and government agencies.

Come see us at Booth N7917 for the next generation of professional streaming technology.

See the full line of products and services offered by Orbital Media Networks at www.orbitalmedianetworks.com, call us at 800-345-8728 (option 1), or email omnistreamer@orbitalmedianetworks.com.

Orbital Media Networks Inc. approves this message.



www.omnistreamer.com

PARAVEL SYSTEMS

WallTime NTP Clock and Notification System

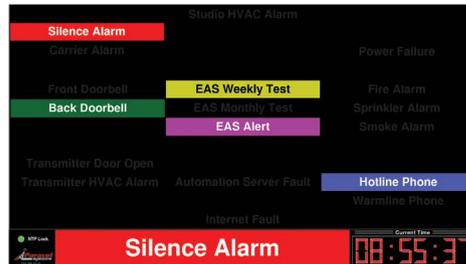
Keep Your Staff Informed and On Time

The WallTime NTP Clock & Notification System from Paravel Systems is the first device to combine several essential services for your studio into one streamlined product. WallTime eliminates the need for expensive synchronized studio clock systems and for the studio notification and alert devices of the past. WallTime provides two primary display modes: an Analog Clock display with widgets and a Notification Status & Alert Monitor.

The Analog Clock display features an always accurate NTP synchronized analog clock that can be customized with wallpaper images to display station logos or other graphics on a large easy to read clock face. Adjacent to the analog clock, two user-selectable widgets can be displayed to provide additional information. There are several widgets to choose from including a Digital Clock display, programmable show Segment Counters, Alert Notifications, an html Text Viewer that can display metadata from automation systems, an On-Air light and more.

The full screen Notification & Alert Display provides simultaneous status display for up to 36 signal inputs and an NTP synchronized digital clock. When an alert state is triggered, the notification field will illuminate and the alert message can be displayed in a large alert window at the bottom of the screen or as a full-screen attention grabber that will assure that your staff is immediately informed of any important alert messages. You can also remotely send message text to a WallTime display. This is great for getting a show host's attention in the studio or for communicating important information with staff during remote broadcasts.

WallTime interfaces directly with Axia Livewire GPIO and with standalone Ethernet GPIO devices. This allows status inputs to be shared between



multiple WallTime units throughout your facility without the need to install any additional wiring. The number of potential status input sources is virtually unlimited.

The WallTime unit is a microcomputer that attaches directly to the back of a standard computer monitor or television display. An HDMI input is required. For the best display resolution, use with a monitor capable of displaying a resolution of 1920x1080 (1080P).

WallTime's NTP synchronized clock is kept always in sync using Network Time Protocol (NTP). A WallTime purchase includes the WallTime device, power supply, HDMI cable and Velcro for attaching the unit to the back of your monitor.

The WallTime NTP Clock & Notification System from Paravel Systems will keep your staff informed and on time.



SOUND4

SOUND4 BIG VOICE² Three-Band Voice Processor

Two-Channel, Three-Band Processor, Dual Power Supply, Mic/Line/Digital/AES67

SOUND4 BIG VOICE² is available in two versions, same sound, different features...

SOUND4 BIG VOICE² — “Base version” Two-Channel

- Three-Band Processor
- Dual Power Supply — Mic/Line/Digital/AES67 Inputs
- Line/Digital/AES-67 Outputs

SOUND4 BIG VOICE² — “Loaded version”

Base version with added features:

- Stackable Bus-Mix
- Front-panel recall
- Headphone...

SOUND4 BIG VOICE² is powered with the revolutionary HQ-Sound 192kHz Audio Processing engine, a SOUND4 patented technology, which has been used for years in other products. Its processing structure includes an advanced DeEsser, three-band noise gate, Pre-EQ four-band parametric, three-band dynamic processor, Post-EQ four-band parametric, brick wall limiter... Yes, much more than a simple noise gate and compressor and we don't stop there, Big Voice² products offer further enhancements with our own plug-in extensions like Reverb and more. SOUND4 BIG VOICE² processors are flexible, and adapt perfectly to all voices. From Natural tone to Big, everything is possible in a few clicks. The SOUND4 BIG VOICE² is the perfect tool for production studios for that smooth voice over.

Dominate-it... Let the lead talent LEAD!

SOUND4 BIG VOICE² includes the revolutionary “Dominate-It” function so the Lead talent is always the leader. This unique feature invented by SOUND4 gives priority to the main talent and will automatically back off guest mics when the main talent speaks. SOUND4 BIG VOICE² can even share the “Dominate-It” function with other BIG VOICE² processors to control other mics if needed!



Bus-Mix...

Auto-Mix all mics to one output and save fader space in consoles! The Bus-Mix function groups selected channel outputs to one physical output. This acts as an Auto-Mix function and is always protected from bus overloads. SOUND4 BIG VOICE² Base is limited to one bus-mix and is not shareable with other devices. SOUND4 BIG VOICE² Loaded offers four Bus-Mix shareable with several BIG VOICE² processors. You can then, for example, have 12 BIG VOICE² mic outputs grouped to one physical output, saving 11 faders on the console.

Preset Sharing...

SOUND4 BIG VOICE² Preset Sharing function, another SOUND4 invention, offers the ability to automatically share presets with other BIG VOICE processors across the network. Presets modified in one studio are instantly updated in all other studios. This saves a considerable amount of time and ensures your carefully tuned sound stays consistent no matter which studio is in use.

THE TELOS ALLIANCE

TVC-15 Watermark Analyzer and Monitor

Monitor and Analyze How Well Each Programming Element Supports Watermarking

Broadcasting is a numbers business. A broadcaster's success depends on what kind of audience they attract and hold. Audience size and composition is measured primarily by reports from private ratings agencies, and for most broadcasters, there's a direct link between those reports and a station's revenue. In electronically measured markets, having good tools — ones that help you understand the entire electronic measurement ecosystem — is essential to your station's competitive picture. With TVC-15, for the first time ever, you can detect, monitor and analyze how well each element in your programming supports watermarking. Measurements happen in real time, right off the air, without depending on or being connected to a particular encoder. Every 400 milliseconds, TVC-15's tone verification codec analyzes the actual code

symbols in any audio you feed it, whether yours or your competitors'. It will work from any source, live or recorded. A front-panel graph of your station's watermark density gives you a granular, moment-by-moment display; you can also download reports to look at encoding quality over hours, days and weeks.



And for stations with a Voltair watermark monitor and processor, you can use TVC-15 to automatically adjust enhancement levels in real time. TVC-15's Intelligent Adaptive

Enhancement [AE] closes the feedback loop, letting you dynamically control Voltair processing based on moment-by-moment analysis of your actual air signal, pushing enhancement when it is needed, while backing off when not. For more advanced watermark monitoring, TVC-15 lets you see what counts!



TelosAlliance.com/25-Seven/TVC-15-Watermark-Analyzer-Monitor

THE TELOS ALLIANCE

Omnia VOLT Audio Processor

Versatile, High-Performance Sound for FM, AM, SG, HD/DRM, Studio

Introducing Omnia VOLT. This versatile new broadcast audio processor features high-performance Omnia sound in just one rack unit. Using core technology with lineage from top-of-the-line Omnia products like the Omnia.11, VOLT features six AGC sections and a five-band limiter for sound that rivals the best processors on the market, while offering broadcasters format versatility and quick, easy tuning.

With VOLT, Omnia has rewritten all the rules for processing, and is delivering more processing power for louder, cleaner and more dynamic sound in one rack unit than others offer in two or even three rack units! We've packed our very best processing chops into VOLT for sound so incredible, so exciting, you won't believe it's emanating from 1RU.

It also has a fresh new industrial design that underscores a major leap forward in processing power.

Notable Omnia VOLT features include:

Incredible Audio — Omnia VOLT audio processor has a next-gen clipper designed by Frank Foti, along with a slew of features that create impeccable audio from only one rack unit. These include six separate

AGC sections; five time-aligned limiter sections; deep bass, warmth and stereo enhancers; and the best factory presets available.

QuickTweak — Omnia VOLT's new QuickTweak system distills years of processing knowledge and proven approaches from Omnia process-



ing pros into a simple set of controls that can turn anyone into a expert. Users can nail their signature sound in minutes whether using Omnia's advanced presets or their own settings, right from the VOLT's front panel or a PC.

Versatility — Using DSP|Core firmware, customers can alter the personality of VOLT to fit their changing needs and applications, whether it's FM, AM, HD/DRM or studio processing. VOLT can even be used as a standalone stereo generator. DSP|Cores aren't extra-cost add-ons. Users simply download the functionality they need for free, install the DSP|Core firmware package from a connected computer and reboot.

THE TELOS ALLIANCE

Axia IP-Tablet

Your Most-Used Console Functions, Right at Your Fingertips!

When you use Axia gear, you are part of a growing, innovation-driven ecosystem — not locked into one console company's vision of the future. Part of Axia's innovation is thanks to the creativity of its more than 100 Livewire partners. Witness the latest from Axia, the award-winning IP-Tablet designed by Livewire partner IP-Studio.

This one-of-a-kind product removes cumbersome and sight-blocking monitors from the studio by moving the monitoring and control of your gear to a smaller, conveniently mounted touchscreen. IP-Tablet runs on a Windows tablet — anything from a low-cost Asus model to a high-end Microsoft Surface, where display sizes range from handheld to wall-sized.

Customize the layout and control of Axia console displays. Choose from one of the predesigned templates, or through the simple drag-and-drop design interface, design a layout that is specific to your needs containing features like VU Meters, Timers, Time and Date Display, Status of On-Air,



Preview and Talkback, the ability to change fader sources and console profiles, full control of on-board virtual mixing with faders and more.

The IP-Tablet also allows you to manage user rights for device access, linking a user's profile to his or her needs. You can mount the Axia IP-Tablet right into your Fusion console with a beautifully machined, completely flush IP-Tablet module or externally. Adding great value to your Axia console purchase, the IP-Tablet puts your most used console functions right at your fingertips!

telosalliance.com/Axia/ip-tablet

WHEATSTONE CORP.

PR&E DMX Audio Console

New IP-Networked Digital Audio Control Surface

Following the acquisition of PR&E in February, Wheatstone introduced the new PR&E DMX console line — a complete standalone studio system with console surface and IP audio networking. The DMX carries forward PR&E's rugged quality and practical functionality, but adds IP audio routing to the mix. It is ideal for a two- or three-studio facility where each location can operate independently as a standalone entity, but with all studios linked together through an IP network.

The DMX AoIP network system is all-inclusive without the need for an external Ethernet switch. It has 1 GB connectivity and integrates easily with most existing radio automation systems. Available in eight or 16 fader mainframes, the DMX has four program busses with bus-minus on every fader. An encoder knob on each channel adjusts PAN, MODE and input SOURCES. The console has talkback and cue functions, EQ/dynamics, control room, studio and headphone monitors, LED metering, built-in timer and four-event recall. The surface uses a 1RU DMX Mix Engine and 1RU Razor I/O module, which can handle 8x8 stereo (16 mono), 6 LIO logic ports and 1 GB Ethernet.



wheatstone.com/radio-products1/radio-consoles/pr-e-overview

WHEATSTONE CORP.

AirAura X4 Digital Spectral Processor

New Dual Touchscreen Top-of-the-Line Multi-Band Audio Processor

Wheatstone’s new FM and HD audio processor has been designed from the ground up based on several technical breakthroughs, including a new interacting system where all stages of processing are aware of each other. In traditional designs different processing stages are created to complement each other, but not all information between stages is shared. The AirAura X4 breaks down that wall and allows the processor to share information between *all* stages. “Our SST and original iAGC algorithms were a doorway into this, where the processor would share information in the front end about who was doing what. Now the iAGC, limiters *and* clipper all share this information, and changes can be made automatically, in real time, in ways never envisioned before,” commented Jeff Keith, product development engineer for Wheatstone processing.

Like its AirAura X3 predecessor, the X4 includes 31-band limiting, but utilizes it working directly with the X4 clipper, providing an audio blue-

print for how the clipper should behave. Incorporating the limiter with the clipper is a major step forward for transparent loudness. With both front- and back-end processing working in concert, the need to make loudness compromises is significantly diminished.

The AirAura X4 includes a redesigned bass processor, enhanced controls in the iAGC, and full RDS capabilities. It includes Wheatstone’s HD/FM audio alignment, which works either with third-party modulation monitors or by itself through the FM/HD tuner built into the unit. AES insert points let customers insert ratings encoders into the processing system instead of before it. This allows the X4’s iAGC to operate ahead of the encoder instead of through an outboard leveler.

Popular features of previous models have been incorporated as well, including improved multipath mitigation, redesigned composite processing with selectable lookahead limiting/clipping, baseband192 composite AES connectivity, and a full set of analysis displays.



wheatstone.com/audio-processing

WHEATSTONE CORP.

VoxPro7

Latest Model Live Radio Audio Recorder/Editor/Playback System

This latest version of VoxPro's purpose-built editor/recorder for live radio now has signal processing to let talent quickly clean up phone calls for on-air presentation. This dynamic and EQ toolset includes parametric EQ, de-esser, compressor, expander, limiter and noise gate for processing call-in and talent tracks independently or jointly. It comes with a standard library of presets.

Also included with VoxPro7 — the new FX Macros for creating one-button presets to instantly call up frequently used effects. FX Macros can trigger one or a chain of actions — for example, start by removing silences in a call-in using VoxPro's GapBuster (which now automatically detects noise floor), then running the result through Dynamics and EQ, and finally normalizing both host and caller channels for final broadcast — all with the push of a single button.

VoxPro7 has also streamlined the system's effects menu, making effects like chorus, reverb and distortion more easily accessible and rendering recent settings "sticky" for faster recall. Improved file navigation with a QuickSearch box and the ability to color-code files and hotkeys make resources much easier to locate in long lists of items.

Other new features include support for 24-bit files and a new animated display.

"This latest version is all about audio quality and being able to do more in less time," says Rick Bidlack, lead engineer for VoxPro.

VoxPro7 is available immediately as an upgrade to existing VoxPro versions in the field.



wheatstone.com/voxpro-recorder-editor/voxpro-system

WORLDCAST SYSTEMS

DB37 Adapter for AUDEMAT CONTROL

Easy Migration to AUDEMAT CONTROL for Existing Burk Users

What is it? The AUDEMAT CONTROL DB37 Adapter makes it quick and simple for existing Burk remote control customers to renew/upgrade to the award-winning AUDEMAT CONTROL. This adapter panel bridges the connections between the AUDEMAT CONTROL and existing Burk IP-8 wiring panels, enabling the technology to be upgraded without having to rewire all of the physical connections.

Who Needs it? Customer reaction to the recently launched AUDEMAT CONTROL unit has been overwhelmingly positive and it is regularly selected as the platform of choice for new installations and station builds. However, when a customer is looking to replace an existing Burk remote control, installation, the time and resources required to rewire the connection panels at their site can be off-putting to the potential buyer. This latest development of the DB37 Adapter aims to remove this obstacle, therefore providing the potential purchaser with a wider range of options for a new remote control system.

Why chose the AUDEMAT CONTROL? The AUDEMAT CONTROL is an IP-based broadcast remote control device, which offers all the core telemetry features you would expect, plus some truly powerful SNMP tools and the embedded intelligence of ScriptEasy software. ScriptEasy gives users the power and flexibility to create “Smart” sites; ones that can automatically take action to correct any critical errors that affect operations. Incorporating GPIO functions, serial communications, logic operators, live user inputs, timers and more, the software allows the site operations to be “scripted,” to allow evaluation of multiple parameters and even automatically engage backup systems, while simultaneously alerting relevant technical personnel. ScriptEasy also incorporates the

MasterView web-based application that allows user to create their own customized end-user view.

In addition the AUDEMAT CONTROL enables you to monitor 10 SNMP devices with the option of adding additional units upon request.

The AUDEMAT CONTROL supports a large number of connections; providing 64 digital inputs, 64 digital outputs and 24 analog inputs, four serial ports, two Ethernet ports, four USB ports, one audio output, one audio input and one modem. The unit offers I/O termination panels with



simple screw terminal connectors to enable connection to real-world signals.

It also features some innovative design features such as an extractible modem and removable SSD disk to ensure ease of maintenance.

The voice modem offers DTMF capabilities for traditional remote notification and control.

Summary: The AUDEMAT CONTROL DB37 Adapter enables quick and painless migration from existing Burk units to the latest technology as offered by the AUDEMAT CONTROL.



www.worldcastsystems.com/en/c17p92/remote-control/audemat-control

AATON DIGITAL

Cantar Mini Digital Sound Mixer/Recorder

A 16-Track Digital Portable Mixer/Sound Recorder

- Capable of recording 16 tracks at 24 bit, 192 kHz, with channel delays and EQ
- Any input can be routed to any of the tracks
- All tracks and inputs can be routed to eight analog auxiliary outputs and /or digital outputs
- Linear faders are assignable to any input, track or output
- The inputs are routed to iso tracks and to either one or two mix tracks
- Inputs can be routed directly to outputs without recording them for comms, etc.
- The mix can be assigned to any of the tracks
- Simultaneous recording to multiple media or backup copying of recorded tracks post-record
- Interface menu accessible through buttons, jog wheel and external keyboard
- High-quality headphone amp with access to headphone presets with pre and post fade monitoring of playback
- All input, output, monitoring and routing setups are available through comprehensive and intuitive menus and can be saved to use at a later date or on another X3 Mini
- 16- or 24-bit Broadcast Wave File recording at sample rates from 44.1 kHz~192 kHz with support for pullup/down recording rates
- Sample rate converters on digital inputs
- Variable Delay on all analog and digital inputs and all analogue and digital outputs
- 30-Second pre-record buffer
- Generous 48V Phantom supply guarantees 8mA to each of the four mic inputs
- High-pass filters are applied before preamp and EQ stage
- All inputs analog and digital have parametric EQ adjustment
- Native monophonic BWF recording with optional polyphonic real-time mirroring to removable media

- Self-generated PDF and CSV Sound Reports, with ALE file embedded with deliverable media
 - Metadata entry of Scene, Take, Notes, Track Names, Roll and more with support for U.S. and
 - Euro-centric metadata templates,

AATON DIGITAL



with extended track names and comments, enterable either in pre-record or during record

- Scene/Take file naming structure
- Aaton AutoSlate automatic slate clap detection and logging
- Built-in slate mic with external slate mic input on 3.5mm jack with phantom power
- High-precision 1 ppm Timecode generator supports all commonly used frame rates
- Remote Record and Stop triggered by external timecode
- Enhanced playback monitoring with waveform display
- M/S recorded tracks automatically decoded to L/R for mixdown and/or monitoring
- USB keyboard input for easy metadata editing, recorder setup and routing control



ADOBE

Adobe Audition CC – Audio Workstation

Accelerate Video Production and Audio Workflows With Improved Efficiency

Create, refine and mix pristine audio content for video and broadcast with a comprehensive toolset including multitrack mixing, waveform editing and a spectral display that allows you to visualize and manipulate sound with incredible precision. Accelerate your video production and audio finishing workflows with improved efficiency.

New in Adobe Audition CC

- *Multichannel Audio Workflows* — Break out multichannel files into separate clips in Multitrack, or pick and choose custom channel configurations for new clips. From intelligent separation of standard formats like 5.1 or Ambisonics, to the unique MXF arrangements common with broadcast and video facilities, the new multichannel workflows in Audition save time and desk space.
- *Enhanced interchange With Premiere Pro CC* — Get started in Premiere Pro and move easily into Audition, thanks to enhanced timeline fidelity. Expanded integration enables a unique workflow not possible with any other industry tools, including lossless transfer of native and third-party audio effect parameters and automation keyframes, track and submix routing, timeline metadata, and renderless Dynamic Link video streaming.
- *Visual Shortcut Editor* — Audition now offers a visual keyboard shortcut editor, making it a breeze to find, modify and create custom keyboard shortcuts for any command. Compatibility when using localized

keyboards with different language installations means added flexibility for any workstation. New presets let Avid Pro Tools users keep familiar keyboard shortcuts when making the switch to Adobe Audition.

- *Updated Effects* — New and updated audio effects across Audition and Premiere Pro provide parity across both apps, making it easy for users to move between the two. Many existing audio effects now have spectrum meters, gain meters, and gain reduction meters for improved visibility into audio adjustments.

With the Essential Sound Panel as part of the Audio workspace inside Premiere Pro editors can designate whether an audio clip is music, effects, dialogue or ambiance and will be presented with straight forward audio parameters, appropriate to the selection made, to help editors achieve optimal sound quickly. Enables video editors with no audio expertise to easily obtain professional quality results without the need for guesswork.



www.adobe.com/products/audition.html

DAN DUGAN SOUND DESIGN

Dugan Model E-3A Automixer

Automatic Microphone Mixing Controller With AES and ADAT I/O

The Dugan Model E-3A brings the convenience of AES and/or ADAT I/O to automatic microphone mixing. This compact and easily connected product is a versatile and useful tool for sound engineers who frequently manage multiple microphones in live venues such as television talk shows, sportscasts, town hall meetings or corporate events. The E-3A is equally at home in the studio, on the road or in temporary or permanent installations. As with other Dugan products, the E-3A is designed to patch in to standard mixing consoles via insert points, giving operators the use of their familiar consoles, but now with comprehensive automatic mixing capability.

The Dugan Speech System automixer at the heart of the E-3A has gained worldwide recognition for its fast, transparent cross-fades. With Dugan automixing, audio problems such as upcutting, choppy sound or shifts in background noise are things of the past. Transitions between talkers are instant, smooth and consistent, no matter how many microphones are open at a time. With Dugan automixing, sound engineers can easily create the best possible mix of live microphones, without the need to “ride herd” on faders.

The Model E-3A replaces the prior Dugan Model E-3. The new version incorporates a bright OLED front panel which is used for automix gain display, management of six matrix mixing buses, and other control functions. The E-3A accommodates 16 channels of AES I/O at 48 kHz or 96 kHz, and may be easily linked to other Dugan digital mixers for system expansion. Alternatively, users may utilize AES and ADAT I/O simultaneously for a maximum of 32 channels at 48 kHz.

Up to six internal matrix mixing buses may be patched to any chosen outputs. 16 automixed channels, 16 unprocessed AES inputs, and 16 unprocessed ADAT inputs are all available for a total of 48 inputs to each matrix bus. For

example, a matrix bus could be used to create an automix inside the E-3A instead of using console insert points, or the buses could be used to create mix-minus outputs for commentators’ cue speakers, or to taper gain of nearby ceiling speakers in a conference room application.

As with all other Dugan automixers, the Model E-3A may be controlled from the product’s front panel, the Dugan Control Panel for Java (supplied free), the updated Dugan Control Panel for iPad, and/or the Dugan Model K Control Surface. The front panel version of the Dugan Control Panel is operated by navigation keys and a rotary encoder for setting values.



The automatic microphone mixer was invented by Mr. Dan Dugan nearly 50 years ago. As the original Sound Designer (the title was established by the theater industry for him), Mr. Dugan sought to create an automixing system that would be utterly transparent to users and listeners. The Dugan Speech System was the result of his research. This method of automixing via gain sharing — where the total system gain is carefully managed to keep microphones and background noise at a stable, consistent level — adapts at near-instant speeds to changing conditions in the room. Unlike gated systems, the Dugan Speech System does not need to work with noise thresholds, so microphones are seamlessly brought into the mix even when a user is whispering; there is no chance of upcuts or choppy sound.



www.dandugan.com

GLENSOUND ELECTRONICS LTD.

The Dante™ DARK1616M

Dante™ & AES67-Compliant Network Audio Interface With Remote Mic Amps

The DARK1616M is a versatile break in/out box for sending/receiving both analog and digital audio to/from a network utilizing the Dante™ audio over IP (AoIP) protocol (which is AES67-compliant). The 16 inputs and outputs of the DARK1616M are paralleled in both analog and AES for maximum flexibility with the added benefit of exceptional quality mic amplifiers and huge 127 dB dynamic range analog to digital converters. Glensound adds broadcast-grade reliability to the Dante™ interface with a primary and secondary copper and fibre links, and primary and redundant power supplies, with solid-state relay loops indicating link and PSU states.

The Dante™ system provides a completely transparent redundant network link system which means that if the Dark1616M lost its primary link circuit the secondary link would automatically take over with no loss of audio.

The DARK1616M includes remote control mic amps on all analog inputs making the inputs mic/line.

These are the highest-quality remote gain-controlled THAT Corp. analog mic amps currently available, the outputs of which are converted to the digital domain by some of the best analog to digital converters available, with 127dB of dynamic range. This allows the mic inputs to enter the audio network in the cleanest way possible.

The AES3 inputs have sample rate converters on them and can accept input frequencies up to 192kHz, the incoming AES3 circuit is always sample rate converted to match the Dante™ network frequency. The AES3 outputs are locked to the sample frequency of the Dante™ network. The primary and secondary network interfaces are routed internally via a network switch. It is possible to set this switch to work as a traditional network switch instead of the default redundant mode, meaning that there would be just one link to the Dante™ network and the other connections of the switch could have other

Dante™ or network devices connected to them. As with all Dante™ devices once set up DARK1616M units can be

directly connected with each other with no external network hardware. The Remote App Controller is the DARK 1616Ms most unique feature.

Modern and sophisticated the Windows 10 App allows full remote control of all the features of the DARK1616M.

The App allows remote control of mic amp gains and phantom power from a computer or laptop.

It is provided for the remote control and setup of the microphone am-



plifier and inputs and allows remote metering of each of those inputs.

The App connects to the DARK1616M via the same network as the Dante™ audio circuits and provides a reliable redundant control system via both the primary and secondary network interfaces, meaning that even if one of the two networks were to become disconnected the remote control would continue to work.

One App can connect to multiple DARK1616Ms and multiple Apps running on different PCs can connect to a single DARK1616M. Using password protection, other users can be prevented from controlling a DARK1616M, meaning only authorized personnel can change the settings on a DARK1616M. For users regularly using the units at different events and functions, settings can be saved and names assigned for quick recall.



www.glensound.com

GLENSOUND ELECTRONICS LTD.

The Paradiso Commentary Box

A Three-Commentator Box and Part of the Dante Audio Networking Family

Dante™ is the preferred audio networking solution that has been adopted by more pro-audio AV and broadcast manufacturers than any other networking technology. Interoperability is not a dream of the future, but a reality today. Glensound entered the Dante™ audio networking world in 2015 with the Dark 88 breakout box, and the Inferno single commentary box. So successful have these units been, that demand for further units has been great. The most requested has been a larger commentary unit, which is now released and called Paradiso.

The Paradiso is an extremely sophisticated commentary unit but it has been designed to be intuitive and easy to use for announcers who would rather be talking about the game than figuring out how the equipment works. It is built to Glensound's exacting rugged and robust standard to make it a reliable piece of broadcast equipment for the busy engineer.

The Paradiso is a three commentator/announcer mixer, with three independent monitoring positions. In addition to the three commentators inputs there is a fourth "Auxiliary" Input. This is provided on a stereo 3.5mm jack socket and is suitable for connection to the outputs of domestic recording devices such as a mobile phone. It can connect to any Dante™-compatible device and can be used by itself to provide facilities for the announcer/commentator alongside an OB truck for small events, or multiple Paradisos can be used at large events that require worldwide broadcast coverage.

The Paradiso can be used as a self-contained, standalone commentator's unit without connecting to a Dante™ network, as the audio I/O is also available on rear-panel XLR connections. It has four talkback outputs and eight headphone monitoring inputs on each commentary

position. These all look stunning as they are accompanied by large e-paper displays for custom labelling for the user and input sources. This display is easily readable in bright sunshine and is completely unique to Glensound.

The Paradiso benefits from first-class audio technology and close attention to detail. Normally if an IP link fails, you have no broadcast!

However our Glitch Free Dante™ network audio interface provides 100-percent resilience with its primary and secondary network connections. If one connection is lost the other takes over completely free of any noise, dropped packets or audio glitches. A lot of attention has been given to optimizing the performance of the THAT Corp. microphone amplifier used in the

Paradiso. It features very low noise and distortion circuits that we remote control the gain of in 0.5 dB steps, which allows us to provide a remote Windows 10 app for gain control as well as the front panel rotary encoders. We also

optimized the circuits to allow correct source impedance switching depending on whether the input has been set as a mic or line input.

Setup is easy, replacing expensive analog or multicore cabling with low-cost, easily-available CAT5e, CAT6 or fiber optic cable for a simple, lightweight and economical solution. It can even be powered by PoE so there is now no longer any need to run technical power to the announcers' gantry.

As with all our commentary units the Paradiso features our very popular and world-renowned Referee compressor limiter circuit. This circuit starts to compress the commentator's voice gradually and slowly increases the compression ratio as the input level becomes overly high, resulting in a very natural sounding and distortion free audio output capable of taming even the loudest of commentators.



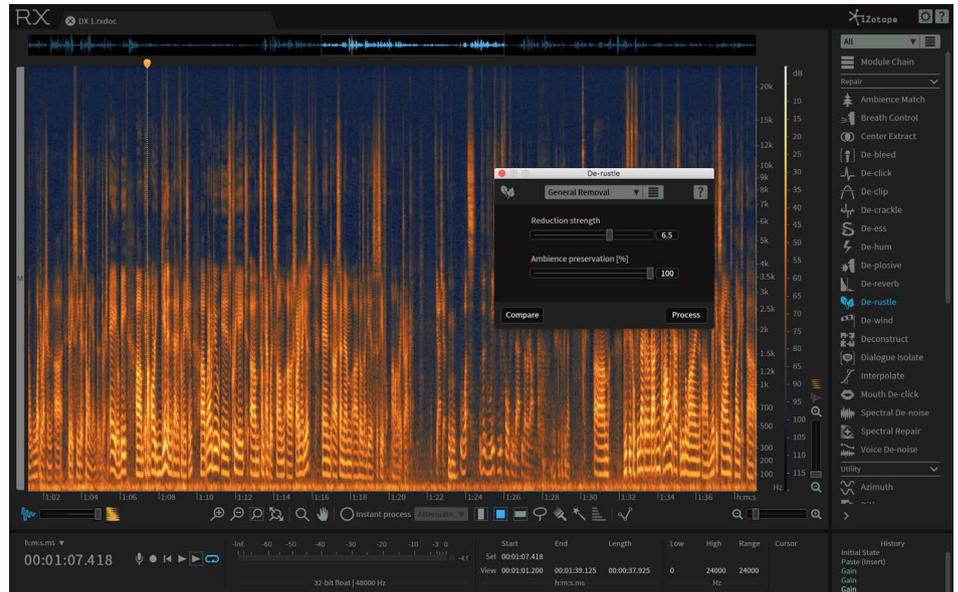
www.glensound.com

IZOTOPE INC

RX 6, Audio Repair

Instantly Repair Audio Issues, Once Unimaginable.

RX is widely recognized as the industry standard in audio repair for post and music production. Version 6 introduces new features and tools that will completely change the way audio repair is done for years to come. Packed with new technologies like wind and mic rustle removal, voice isolation, composite editing, de-bleed, spectral de-esser and breath reduction plug-ins and much more, RX 6 is our biggest upgrade ever.



www.izotope.com/en/products/repair-and-edit/rx.html

SENNHEISER ELECTRONIC GMBH & CO. KG

Digital 6000 Wireless Microphone System

Impeccable RF Wireless and Audio Performance, Flexible Two-Channel Solution

The Digital 6000 microphone system takes the acclaimed Long Range transmission mode and proprietary audio codec from Sennheiser's flagship Digital 9000 series to applications that demand smaller, more flexible systems. Thus, Digital 6000 not only delivers impeccable RF wireless and audio performance, it also fulfils the business need of rental companies, theaters, broadcasters and houses of worship for a flexible two-channel wireless solution that allows the use of existing accessory infrastructures.

Designed for demanding live productions, Digital 6000 also addresses the challenges of the shrinking UHF spectrum. The system eliminates intermodulation, so frequencies can simply be placed in an equidistant grid (instead of having to plan frequencies around intermodulation products), enabling more channels to operate in less spectrum space.

The Digital 6000 series comprises a two-channel receiver that is available in two different versions (EM 6000 and EM 6000 Dante), a bodypack and a handheld transmitter, plus a modular, rack-mount 19-inch charging unit. The receiver's switching bandwidth of 244 MHz (470 to 714 MHz) is covered by three transmitter versions (470–558 MHz, 550–638 MHz, and 630–718 MHz). Up to eight receiver units can be daisy-chained without the need for an additional antenna splitter.

To ensure superior reception and reliable audio, Digital 6000 uses true bit diversity, transmission error correction and additional intelligent error concealment.

True bit diversity is a new diversity technique that ensures a far better reception quality than other diversity techniques, for example switching diversity or true diversity.

While the latter either work with the RF signal of a single antenna or the audio signal of a single reception path, true bit diversity combines the information content of both reception paths for an optimum signal.

If, as in difficult RF environments, the signal should get temporarily cor-

rupted to such an extent that the transmission error correction of Digital 6000 can no longer repair it, the intelligent error concealment sets in.

It employs intelligent learning algorithms to replace the corrupted part, enabling Digital 6000 to still transmit flawlessly where other digital systems fail.

For data security, Digital 6000 features switchable AES 256 encryption, with the transmitters also supporting the proprietary encryption of the Digital 9000 system.

Digital 6000 has been designed to keep additional investments as low as possible. Existing antenna infrastructures can continue to be used as the system works with standard active and passive wideband UHF antennas. Also, the Digital 6000 transmitters use the same high-perfor-



mance rechargeable accupacks as their Digital 9000 counterparts.

The SKM 6000 handheld transmitter features Sennheiser's standard capsule interface — it can therefore be used with any microphone head from the evolution wireless Series, the 2000 Series and also with the special 9000 Series heads. The SK 6000 bodypack excels as a high-end solution for wireless instruments such as guitar and bass — or is ready to use with a variety of Sennheiser clip-on microphones and headmics.

For quick setup, Digital 6000 is fitted with an automatic frequency setup function. A user-friendly menu control with a bright, white OLED display gives a quick overview of the most important parameters. Several home screens provide easy access to further information, without the user having to navigate through submenus. Critical operating conditions and error messages are directly indicated on the display. Digital 6000 is compatible with Digital 9000 in long-range mode and with the EK 6042 digital/analog camera receiver, integrating seamlessly into digital or analog system infrastructures.



www.sennheiser.com

SHURE INC.

Axient Digital Wireless System

Shure's Most Advanced Wireless Platform

Shure debuted the Axient® Digital Wireless System at the 2017 NAB Show. As the new premier wireless system in Shure's successful portfolio, Axient Digital builds on the superior benefits of the company's UHF-R®, ULX-D® and Axient wireless systems to create the most advanced wireless platform to date, suited for all professional productions and situations. Catering to evolving customer needs — especially in an environment of continued RF spectrum pressure — Axient Digital provides high-performance RF, exceptional audio quality, command and control, and hardware scalability.

Axient Digital features a receiver that is compatible with its two transmitter offerings, the AD Series and ADX Series.

AD Series transmitters deliver a tremendous level of core product benefits including exceptional RF performance, digital audio and networking. Axient Digital ADX Series transmitters additionally incorporate ShowLink, which provides real-time control of all transmitter parameters along with interference detection and avoidance. The ADX Series also includes the first micro bodypack with an integrated self-tuning antenna, enabling greater concealment and comfort.

Ideal for a variety of users and applications, Axient Digital features numerous user-friendly features and benefits:

- High-Performance RF — Incorporating all of the capabilities that professional productions demand, Axient Digital is designed for maximum signal stability. It features true digital diversity with Quadversity™ and a robust high density mode that delivers superior spectral efficiency, significantly mitigating the potential for signal fades or interference that can cause drop outs. Quadversity antenna mode enables users to place sets of diversity antennas in different zones, or double the number of antennas in a single zone, to improve RF signal-to-noise in challenging environments.
- Audio Quality — Featuring transparent digital audio via Dante, AES67 and AES3, Axient Digital has a 20 Hz to 20 kHz range with a flat frequency response and accurate transient response. Axient Digital also boasts wide dynamic range and an industry leading 2ms latency from the mic transducer to the analog output.
- Command and Control — Axient Digital is compatible with Shure's Wireless Workbench® for efficient control and configuration, as well as the ShurePlus™ Channels App for optimal spectrum management and frequency monitoring. The system's



Dante Cue and Dante Browse features enable headphone monitoring of high-fidelity, true audio output from any Dante-enabled connected device. Additionally, Axient Digital's networked charging capabilities provide a suite of smart, high-performance batteries and chargers.

- Hardware and Scalability — Axient Digital's wide tuning range of 184 MHz for all transmitters and receivers covers an extended range of spectrum and simplifies inventory. Dual and quad receiver options combined with a common receiver platform supporting both AD and ADX transmitters, maximizes user flexibility and scalability.

Axient Digital is compatible with the Shure Battery Rack Charger (SBRC), which supports up to eight rechargeable batteries in a single, compact rack space. Providing a seamless, tour-ready battery charging and storage solution, the SBRC features an easy-to-read front panel that displays critical battery parameters, including charge status, time-to-full and battery health indicators. When connected to a network, Shure Wireless Workbench and ShurePlus Channels software provide remote monitoring of the SBRC to track battery status.

Given the increasing challenges of RF spectrum, it's essential that users have access to a system that can deliver the critical audio inputs of a production reliably over the air.

With unparalleled RF stability and spectral efficiency, Axient Digital offers a variety of users the flexibility to work in the available spectrum, whether the number of channels required is great or small, and provides the pristine sound quality that today's productions demand.



www.shure.com/axient-digital

BITTREE PATCHBAYS

12G+ Mini-WECO Coaxial Video Patchbay

High-Performance, Single-Link Patching Simplifies Next-Gen Infrastructures

Delivering high-bandwidth performance for SD-SDI, HD-SDI, UHD-SDI, HDR, 4K and 8K single-link video applications, the new 12G+ Mini-WECO (Midsize) Coaxial Patchbay family extends Bittree's hallmarks of design excellence and trusted reliability to next-generation video infrastructures.

While adoption of 4K workflows in the broadcast and professional audio/visual industries continues to accelerate, the most common mechanism for transporting 4K content in production and distribution environments has been quad-link connectivity, comprising four coaxial cables for each 4K feed. The exceptional performance and precision of Bittree's 12G+ patching systems enables reliable handling of 4K over a single 12 Gbps link, dramatically simplifying cabling for studio, master control, A/V system and mobile production deployments while quadrupling the number of 4K channels that can be routed through each unit.

The higher bit rates and frequencies needed for transporting 4K and greater signals on a single link require greater attention to the cables, connectors and connectivity equipment in the chain. Bittree's 12G+ mini-WECO patchbays are engineered to deliver exceptional performance and exceed SMPTE specifications including SMPTE 292M, 424M, ST2081-1 and ST2082-1.

Offering 75-ohm impedance with low return loss and ringing out at 24 GHz, the future-friendly 12G+ patchbays support data rates up to 48 Gbps and provide a tremendous amount of clean headroom for not only 4K, but also 8K, HDR and higher bit-rate applications. To help further maximize signal integrity, Bittree can also supply high-quality, 12G+ rated connecting patch cables, terminators and looping plugs.

The new 12G+ mini-WECO patchbays are offered in five configurations to meet a flexible range of user connectivity and space requirements: 1x32 in 1RU of rack space; 2x32 in 1RU, 1.5RU or 2RU models; and 3x32 in a 3RU form factor. Designation strips enable easy labelling and identification. Distinctive, stylized green color-coding of the panels, patch cords, termination, and looping plugs easily conveys their 12G+ compatibility.



The panels and connectors are designed and built to exacting standards to withstand the demands of heavy-usage applications and rigors such as the vibration occurring in mobile production environments. Precision-machined phenolic insulators electrically and mechanically separate the jacks from the front panels. The units are constructed of 3/16-inch machined aluminum with a durable powder-coat finish and stylized front panel design.

Like all of Bittree's renowned audio, video and data patching systems, the 12G+ mini-WECO coaxial video patchbays leverage the company's 39 years of proven engineering expertise, and are designed, built and tested to rigid quality standards in Bittree's state-of-the-art facility in Glendale, Calif. The 12G+ patching systems are available immediately, and are backed by expert customer service from Bittree's dedicated sales engineers.



www.bittree.com

CANON U.S.A. INC.

REALiS 4K600STZ 4K Laser LCOS Projector

Outstanding Image Quality and Advanced Features With Low TCO

At only 57.3 pounds, the REALiS 4K600STZ is among the world's smallest and lightest native 4K laser projectors, making it ideal for a wide range of markets and applications including simulation, museums, art galleries, planetariums, higher education, medical education and training.

The REALiS 4K600STZ Pro AV Laser LCOS Projector reproduces exceptionally detailed images with outstanding color accuracy thanks to a combination of core technologies and features including 4K resolution (4096 x 2400), a Laser Phosphor Light Source, 6,000 lumens with up to 10,000:1 Dynamic Contrast Ratio, Canon's renowned LCOS Technology with AISYS-enhancement, a Genuine Canon 4K Lens, and Powerful Dual Image Processing Engines for uncompressed 4K 60p playback and optimal upscaling of 2K video



and other non-native 4K resolution content.

The REALiS 4K600STZ is one of Canon's only HDR-compatible projectors, which helps provide the critical ability to replicate content with exceptionally high contrast, making possible gradation expression close to that of human vision. Additionally, the projector supports the input of video content simulating the 4K/8K broadcast-standard ITU-R BT.2020 color gamut.

The Canon REALiS 4K600STZ offers many industry-standard interfaces to enhance usability including two HDMI (version 2.0a), and four DVI inputs supporting single, stripe and cross configurations for 4K, 2K or HD video playback. Network management, including compatibility with PLink™, Crestron Room View and AMX Device Discovery, also helps provide outstanding flexibility for monitoring and control.



projectors.usa.canon.com

EPSON AMERICA INC.

Epson BrightLink Pro 1460Ui

Transform Any Flat Surface Into a Bright 100-Inch Interactive Canvas

Epson continues to drive the interactive display market with BrightLink Pro by building on innovative features to connect people, technology and ideas into one seamless digital experience. Combined with Epson's advanced 3LCD light engine for bright, vivid colors, the interactive display results in impactful presentations and productive collaboration. Epson's new BrightLink® Pro 1460Ui interactive display facilitates better ideation and storyboarding by turning any surface into an interactive area. The BrightLink delivers crisp image quality with Full HD WUXGA resolution and a bright, readable display up to 100-inches — 3x as big as a 60-inch flat panel.

When it comes to communication and collaboration, the sky's the limit with BrightLink Pro with DuoLink. This unique feature allows you to install two BrightLink Pro interactive displays side by side to create one super-wide interactive space that you can use as an extended electronic whiteboard up to 177.5-inches diagonal size (53-inches H x 169.5-inches W). Or, utilize the extended desktop function to display and annotate content from your PC across a wider area. With a space this big, the only thing stopping any user from their next big idea would be their imagination.

Designed to simplify how people work together, BrightLink Pro includes an optional portable interactive display surface. The BrightLink Pro All-in-One Interactive Table features a mobile, motorized work surface to increase versatility and application around the office. Teammates can move the BrightLink Pro from room to room and easily project presentations, designs, drafts, illustrations and animations onto the sleek desktop table.

The Epson BrightLink Pro 1460Ui interactive display offers several advantages to meet a variety of business



needs, including:

- Easy-to-use, touch-enabled interactivity — Just turn on BrightLink Pro and start writing using your finger; supports gestures, up to six fingers for annotations, and dual-pen support
- Capture, save and share — No need to transcribe meeting notes or snap a photo; easily save, print or email directly from your BrightLink Pro without a PC or software
- Whiteboard sharing — Both local and remote participants can simultaneously annotate content from mobile devices, computers and other BrightLink Pros
- Miracast— ideal for video conferencing, large conference rooms, and training rooms
- Wireless device compatibility — Wirelessly display documents, files and photos from your iPad®, iPhone®, and Android mobile devices with the Epson iProjection™ App¹

¹ For wireless functionality, including via the Epson iProjection App, the projector must be configured on a network, either through the Ethernet port on the projector (check model specifications for availability) or via a wireless connection. Check your owner's manual to determine if a wireless LAN module must be purchased separately to enable a wireless connection. Not all Epson projectors are able to be networked. The Epson iProjection App does not support all files and formats. See www.epson.com for details.

Note: EPSON is a registered trademark. iProjection is a trademark for Seiko Epson Corp. BrightLink is a registered trademark of Epson America Inc. Apple, iPad, iPhone and Mac are trademarks of Apple Inc., registered in the U.S. and other countries. Miracast is a registered trademark of Wi-Fi Alliance®. Android is a trademark of Google Inc. Other product names used herein are for identification purposes only and may be trademarks of their respective owners. Epson disclaims any and all rights in those marks.



www.epson.com/blpro

EXTRON

StudioStation

A Simple One-Touch Recording Solution for High-Quality AV Presentations

Extron's StudioStation™ is a quick, simple, and convenient solution for one-touch recording of high-quality video and audio presentations. To turn the system on, insert a USB stick and press the record button to begin recording. Systems are customizable to support any installation. StudioStation solutions are ideal for flipped classroom recordings, lecture capture, student assessments, rehearsal spaces, moot courts or any other application where making a recording by pressing only one button is desired. Simple to Operate When the user inserts a USB storage device into the remote control panel, the system automatically powers up and is ready for use. Simply press the record button to begin recording. Once the recording is complete, removing the USB storage device places the system into a standby state and turns off any devices connected to the power controller. The core components can be located securely in an equipment rack, with only the control panel and USB connection visible to the user. Quality Recordings for Any Application Extron's high-performance scaling and flexible signal processing enable superior recording of nearly all HDMI source resolutions. The default recording setup is configured for 720p at 5 Mbps, producing an MP4 media file, which is compatible with virtually any media player or editing software. Using the embedded web page, it is easy to customize the default configuration to meet the needs of many applications.

Features

- *Recording Studio Kit* — Preconfigured system for studio recordings, eliminating the time and expense of designing and programming a studio recording system.
 - *One-Touch Recording* — Automates all functions for a simplified recording

studio where single button press starts recording. Operation is simple and intuitive, with no support staff required.

- *Automatic Communication With IP Link Power Controllers*
- *Works With Any HDMI Camera or Video Source* — Supports any camera, laptop, or mobile device up to 1080p. The input signal is scaled to match the recording resolution.



- Records MP4 media files that are compatible with virtually any media player — Recordings are compatible with virtually any software media player, computer, or mobile device.
- Power Control for lighting or other devices — Automatically turns on lights and other devices when a USB storage device is connected.
- StudioStation kits can be upgraded with video switching and enhanced control options
- Remote control panel and tabletop enclosure available in white or black to compliment any decor



www.extron.com/company/article.aspx?id=studiostationad

IHSE USA

Draco vario OPS+ KVM Extender for Display

OPS+ KVM for 4K DisplayPort KVM Using Intel's Open Pluggable Specification

IHSE created the Draco OPS+ KVM to support the growing number of digital signage and command-and-control installers implementing displays equipped with Intel's open pluggable specification (OPS+). It is based on IHSE's Draco Ultra DisplayPort CON extender and features video and USB-HID display components for KVM.

The Draco OPS+ package design is based on OPS+, which Intel® created to help standardize the design and development of ultra-high-definition digital signage devices and pluggable media players. It was launched as a way to bring standardization to a highly fragmented media player market. By utilizing an Intel-owned Arria® processor and creating a simplified architecture, OPS+ has allowed for more cost-effective design, deployment and management of display devices such as IHSE's OPS+ KVM.

As large video displays become more centralized to business operations, it becomes more critical that manufacturers prioritize what works best for the end users. In many cases, users add a typical KVM extender module to connect the display back to the computer source over long distances. However, current remote extender concepts add an additional box, which increases the amount of cables and power connections needed. This adds an additional layer of hardware maintenance and more possibilities for a security breach. With the pluggable slot design of OPS+, a higher level of security is possible while reducing the need for additional power. By repackaging the Draco ultra console (CON) extender to fit the OPS+ slot, IHSE created a module design that effectively lowers the deployment and field maintenance costs associated with connecting workstations or digital signage over long distances. From the OPS+ extender

CON unit, a duplex fiber cable can increase the distance between the display and source by up to 10 kilometers. By incorporating a KVM matrix switch, multiple OPS+ extender modules can be easily managed over IHSE's Tera Viewer GUI. The KVM switch's built-in control methods allow permission-only access to touchscreen displays,



podium presentation equipment, or an operator's workstation before granting access to the CPU.

Normally system installers and users of large video walls are the ones who are looking for affordable and reliable extender solutions that support 4K video and KVM/touchscreen interfaces. Although many commercial enterprises are quickly moving to 4K resolutions, they are still strapped with limited bandwidth access and minimal budgets for upgrading to higher resolutions. However, new compression technologies, such as the Fraunhofer IIS lightweight image coding technology (Lici®) used in IHSE's OPS+ KVM extenders, yield higher color accuracy and improved image quality to overcome the limitations of traditional video compression techniques. IHSE's new OPS+ Ultra DisplayPort extenders can manage up to full 4K (4:4:4) 60 hertz at 30 bits without latency.

With KVM systems like those from IHSE, it is not necessary to configure OPS+ extender endpoints on the network. Using IHSE's flex-port technology, users simply connect OPS+ modules to the matrix switch, and the switch automatically configures them for the port assigned. There is no need to create IP-mapping structures, thus eliminating the need for IP addressing of each OPS+ device. As future displays are added, a technician can simply attach an OPS+ module to an open port on the KVM switch and be operational in minutes.

www.ihseusa.com



IHSE USA

Draco vario KVM/SDI Extender

SDI-to-KVM Converter Modules for KVM Switching

IHSE's Draco vario KVM/SDI converters advance the capabilities of SDI-to-computer video by automatically detecting the input video format and instantly changing between SDI broadcast formats to high-definition DVI, HDMI or DisplayPort computer video formats. Traditionally KVM and broadcast systems have been considered isolated architectures, but now with IHSE's new 486 Series, these different architectures can be shared and configured under a single matrix system. The Draco vario KVM/SDI extenders are used in TV studio, postproduction, digital cinema or audio-visual applications in which users need to show digital video from an HDMI source on a professional SDI monitor, or input an SDI source for preview and monitoring purposes through a KVM switch connected to a computer display. KVM has become much more important for broadcast-related system design because of the increased adoption of digital video servers and computers throughout the broadcast ecosystem. As system designers continue to integrate server-based architectures for editing and playback options, they must configure systems using traditional human interface devices, such as a keyboard and mouse from each workstation. However, KVM is usually considered part of the backroom network services, so many of the latest features of a professional KVM system are missed during the original design phase.

A key benefit of the Draco vario KVM/SDI extender is its ability to connect directly to a KVM matrix switch. Previously, creating an SDI-to-HDMI conversion required a secondary converter box connected to the KVM extender. In this scenario, each display or source connection required additional cabling, power and a converter unit – thus doubling the unit cost and maintenance concerns. With the Draco vario KVM/SDI, the conversion to and from the extenders happens inside the same module, thereby reducing power consumption and cabling and eliminating the need for extra power outlets or module placement.

Video scaling and deinterlacing is included in the SDI extender, enabling conversion as required between 720p50/60 or 1080i50/60

SDI video streams and digital formats including 1080p, 1600x900 and 1920x1200. This capability ensures that the appropriate video resolution is available to suit the connected monitor. SFP modules are available to suit dual-input and dual-output configurations. In addition, the extender supports a loopback option, enabling an SDI signal to be passed on to additional SDI devices while being input into the extender for KVM distribution.



There are two models available: the L486 model that converts SDI input signals to IHSE's flex-port technology for integration to a KVM matrix switch, and the R486 model that converts flex-port technology to SDI for connecting broadcast-style monitors. Each model offers optional redundant flex-port connections that can be used for critical-path applications where a backup system is desired or where a source needs to be shared between two separate switch systems. This capability enables an uninterrupted connection during maintenance, a backup system in fully redundant or mission-critical environments, or the ability to share CPU sources between multiple KVM systems.

Both the L486 and R486 models support optical fiber connections between the extenders and KVM matrix, and can extend video, keyboard and mouse up to distances of 10 kilometers on each side of the matrix. Often it is necessary to run a second cable to a different matrix in case the main input is lost. With an optional extender that adds dual-port links for redundancy, these converters can automatically switch over to the second input — a great option for operations that cannot afford to lose a signal or go off air.



www.ihseusa.com

JVCKENWOOD USA CORP.

KY-PZ100 IP-Based PTZ Camera

Robotic PTZ IP Network Video Production Camera

The KY-PZ100 is a robotic pan, tilt and zoom video production camera. It's the first PTZ camera that features JVC's unique IP communications engine providing network connection via Wi-Fi*, 4G-LTE*, or cabled LAN. It's designed to be used as a stand alone remote camera or as part of a multi-camera system in both studio and field environments. In addition to its 3G-SDI and HDMI outputs, it is also capable of reliably streaming 1080i/60, 1080p, 720p, and 360p video with two-channel audio — all with minimal latency and forward error correction. Camera control is possible from a web browser or with the dedicated RM-LP100 remote control panel, or from a variety of remote units using standard protocol. The camera also includes on-board HD recording at up to 50 Mbps to a micro SDHC/SDXC card with the ability to upload the recorded files to an external server.

The KY-PZ100 features JVC's highly accurate direct drive mechanism for smooth, quiet and precise positioning with up to 100 preset positions. Positioning can be performed at a range of speeds from very very slow to very fast while retaining pin-point accuracy (within 0.03°). A newly developed 1/2.8-inch image sensor and 30x optical zoom lens produce superb broadcast-quality images even in low light environments. The camera's Wide Dynamic Range mode provides clear natural foreground images even under challenging highlight conditions.

Power the camera, control it, and stream to the world all from a single ethernet cable. Or go wireless. Just provide power to the camera, plug in a Wi-Fi adapter or LTE modem, and you'll have the world's most convenient, high-quality robotic camera that can be placed virtually anywhere, stream full HD, and be controlled from anywhere in the world!

Key Features:

- 1/2.8-inch CMOS sensor (2.2 million pixels)
- Optical zoom lens with 30x zoom ratio (4.3-129mm, f/1.6~4.7)
- 12x digital zoom
- Autofocus and image stabilization built-in.
 - Fast f/1.6-4.7 maximum aperture for excellent low light
 - High sensitivity mode (down to 0.02 lux, color)
 - Night mode (0.003 lux, BW)
 - Direct drive motor for smooth, quiet and accurate pan and tilt
 - PoE+ equipped: LAN cable enables simultaneous streaming, camera control and power supply
 - Full HD 1080p, 1080i, 720p video



- Simultaneous 3G-SDI and HDMI and IP digital outputs
- Two-channels audio (or one-channel balanced audio)
- USB host connection for Wi-Fi or 4G LTE adapter

Advanced IP Communications Capability:

- Streaming with SMPTE 2022 forward error correction
- Advanced Zixi reliable communication with ARQ, FEC and adaptive bitrate control (Requires optional Zixi license) Low latency streaming
- Standard control protocol over LAN (enables PTZ control by TriCaster and other products)
- RTMP streaming directly to content delivery network (JVC VIDEOCLOUD, YouTube, Ustream, etc.)
- PELCO-D control protocol via RS-422/485
- Micro SDHC/SDXC memory card recording (H.264 50Mbps)
- Remote control via RS-232C / RS-422, or via IP controller
- Can memorize 100 preset settings and positions
- Can be mounted upside-down or right-side-up

* Wi-Fi and 4G-LTE require optional external adapter.

pro.jvc.com



PARAVEL SYSTEMS

WallTime NTP Clock and Notification System

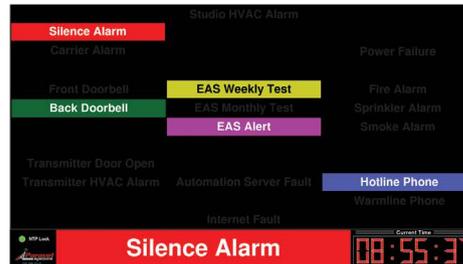
Keep Your Staff Informed and On Time

The WallTime NTP Clock & Notification System from Paravel Systems is the first device to combine several essential services for your studio into one streamlined product. WallTime eliminates the need for expensive synchronized studio clock systems and for the studio notification and alert devices of the past. WallTime provides two primary display modes: an Analog Clock display with widgets and a Notification Status & Alert Monitor.

The Analog Clock display features an always accurate NTP synchronized analog clock that can be customized with wallpaper images to display station logos or other graphics on a large easy to read clock face. Adjacent to the analog clock, two user-selectable widgets can be displayed to provide additional information. There are several widgets to choose from including a Digital Clock display, programmable show Segment Counters, Alert Notifications, an html Text Viewer that can display metadata from automation systems, an On-Air light and more.

The full screen Notification & Alert Display provides simultaneous status display for up to 36 signal inputs and an NTP synchronized digital clock. When an alert state is triggered, the notification field will illuminate and the alert message can be displayed in a large alert window at the bottom of the screen or as a full-screen attention grabber that will assure that your staff is immediately informed of any important alert messages. You can also remotely send message text to a WallTime display. This is great for getting a show host's attention in the studio or for communicating important information with staff during remote broadcasts.

WallTime interfaces directly with Axia Livewire GPIO and with standalone Ethernet GPIO devices. This allows status inputs to be shared



between multiple WallTime units throughout your facility without the need to install any additional wiring. The number of potential status input sources is virtually unlimited.

The WallTime unit is a microcomputer that attaches directly to the back of a standard computer monitor or television display. An HDMI input is required. For the best display resolution, use with a monitor capable of displaying a resolution of 1920x1080 (1080P).

WallTime's NTP synchronized clock is kept always in sync using Network Time Protocol (NTP). A WallTime purchase includes the WallTime device, power supply, HDMI cable and Velcro for attaching the unit to the back of your monitor.

The WallTime NTP Clock & Notification System from Paravel Systems will keep your staff informed and on time.

PLATINUM TOOLS

ezEX-RJ45 Termination System

For Terminating Larger Cat6/6A Cables

In today's networks, twisted pair cables are demanding more speed and bandwidth. To help meet these requirements, Cat5e/6/6A cables have increased in size. Both the outer diameter of the cable and the insulation diameter of the conductors are larger and vary by manufacturer, making cable and connector compatibility a challenge. The new patented ezEX-RJ45® Termination System is the solution — providing greater cable to connector compatibility to meet higher performance demands. The ezEX-RJ45® connectors feature a unique integrated Hi-Lo stagger load bar and allows “big” conductors to pass through the front end of the connector making it easy to verify the wiring sequence before terminating.

ezEX-RJ45® Termination System



www.platinumtools.com/products/connectors/ezex-rj45-termination-system-shipping-now/

SHURE INC.

Axient Digital Wireless System

Shure's Most Advanced Wireless Platform

Shure debuted the Axient® Digital Wireless System at the 2017 NAB Show. As the new premier wireless system in Shure's successful portfolio, Axient Digital builds on the superior benefits of the company's UHF-R®, ULX-D® and Axient wireless systems to create the most advanced wireless platform to date, suited for all professional productions and situations. Catering to evolving customer needs — especially in an environment of continued RF spectrum pressure — Axient Digital provides high-performance RF, exceptional audio quality, command and control, and hardware scalability.

Axient Digital features a receiver that is compatible with its two transmitter offerings, the AD Series and ADX Series.

AD Series transmitters deliver a tremendous level of core product benefits including exceptional RF performance, digital audio and networking. Axient Digital ADX Series transmitters additionally incorporate ShowLink, which provides real-time control of all transmitter parameters along with interference detection and avoidance. The ADX Series also includes the first micro bodypack with an integrated self-tuning antenna, enabling greater concealment and comfort.

Ideal for a variety of users and applications, Axient Digital features numerous user-friendly features and benefits:

- High-Performance RF — Incorporating all of the capabilities that professional productions demand, Axient Digital is designed for maximum signal stability. It features true digital diversity with Quadversity™ and a robust high density mode that delivers superior spectral efficiency, significantly mitigating the potential for signal fades or interference that can cause drop outs. Quadversity antenna mode enables users to place sets of diversity antennas in different zones, or double the number of antennas in a single zone, to improve RF signal-to-noise in challenging environments.
- Audio Quality — Featuring transparent digital audio via Dante, AES67 and AES3, Axient Digital has a 20 Hz to 20 kHz range with a flat frequency response and accurate transient response. Axient Digital also boasts wide dynamic range and an industry leading 2ms latency from the mic transducer to the analog output.
- Command and Control — Axient Digital is compatible with Shure's Wireless Workbench® for efficient control and configuration, as well as the ShurePlus™ Channels App for optimal spectrum management and frequency monitoring. The system's



Dante Cue and Dante Browse features enable headphone monitoring of high-fidelity, true audio output from any Dante-enabled connected device. Additionally, Axient Digital's networked charging capabilities provide a suite of smart, high-performance batteries and chargers.

- Hardware and Scalability — Axient Digital's wide tuning range of 184 MHz for all transmitters and receivers covers an extended range of spectrum and simplifies inventory. Dual and quad receiver options combined with a common receiver platform supporting both AD and ADX transmitters, maximizes user flexibility and scalability.

Axient Digital is compatible with the Shure Battery Rack Charger (SBRC), which supports up to eight rechargeable batteries in a single, compact rack space. Providing a seamless, tour-ready battery charging and storage solution, the SBRC features an easy-to-read front panel that displays critical battery parameters, including charge status, time-to-full and battery health indicators. When connected to a network, Shure Wireless Workbench and ShurePlus Channels software provide remote monitoring of the SBRC to track battery status.

Given the increasing challenges of RF spectrum, it's essential that users have access to a system that can deliver the critical audio inputs of a production reliably over the air.

With unparalleled RF stability and spectral efficiency, Axient Digital offers a variety of users the flexibility to work in the available spectrum, whether the number of channels required is great or small, and provides the pristine sound quality that today's productions demand.



www.shure.com/axient-digital

SILICONCORE TECHNOLOGY

LISA (LED In Silicon Array)

LISA Redefines the Rules of LED While Reimagining LED Displays Manufacturing

SiliconCore is the first LED display creator to successfully implement Chip On Board (COB) manufacturing with the creation of LISA (LED In Silicon Array), which was launched to the broadcast industry at the 2017 NAB Show. This new technology platform rewrites the rules of LED displays as we currently know them to create a highly innovative large-format display platform. Featuring SiliconCore's Common Cathode technology, LISA offers a market-leading total cost of ownership, keeping costly servicing and maintenance needs down for studios implementing it.

Totally disrupting the LED display marketplace, LISA represents a departure from the usual SMD manufacturing process in which the individual light-emitting diodes are directly bonded to the PCBs, removing the need for traditional Surface Mount Diodes (SMD) on the board. This process makes the module mechanically more robust and rigid, increasing its durability and allowing it to be quickly and easily dismantled and reassembled when moving it between studios. It also means that it is more flexible in its applications, allowing the displays to be used in higher foot-traffic areas and public spaces, such as on sets or busy studio areas. What's more, by directly bonding the LEDs to the PCBs means less layers in the final design, which in turn means the displays take up significantly less studio space.

SiliconCore's unique process also brings significant visual benefits including improved color uniformity and reduced color shift for immaculate displays throughout the product lifetime. It also enables even finer pixel pitches, which mitigate the moiré effect, making it the perfect choice for stunning studio backdrops.

LISA will be the future of SiliconCore's signature high-resolution applications including broadcast, command and control, corporate, home theater, cinemas and high-end retail applications. Large immersive displays can be presented in a variety of formations including curves with potential pixel pitches of up to 10mm and 8,000 nits maximum brightness. LISA also offers great viewing angles, vital for off axis camera work.

The LISA manufacturing method



allows SiliconCore's engineers to work in precise levels of detail by streamlining the manufacturing process and improving the structural integrity of the module, ensuring pixels cannot be damaged during installation and throughout the product lifetime. This ensures that any SiliconCore display can survive a busy film lot or studio without the worry of it succumbing to wear-and-tear damage.

This is the future of LED display creation and will, over time, replace the industry norm of SMD. As a silicon-based solution, economies of scale are expected to be reached opening even larger opportunities for high-resolution LED displays in public spaces and high-quality solutions for the broadcast industry.

These incredible benefits are further enhanced by that of SiliconCore's unique Common Cathode technology, managing power consumption and efficiency. SiliconCore continues to improve upon its own patented driver chip, significantly advancing the data bandwidth. It features a high-speed pixel clock ensuring outstanding visual performance without compromise. This is the highest-performance driver chip in the industry with double the scan rate and a fourfold increase in processing speed, reducing the number of chips required per display up to 75 percent.



www.silicon-core.com/news/SiliconCore-to-launch-next-wave-in-LED-manufacturing-at-NAB-2017

STUDIO TECHNOLOGIES INC.

Model 5422 Dante Intercom Audio Engine

Creates Party-Line Circuits for Dante Applications

The Model 5422 is a high-performance, cost-effective solution for creating party-line (PL) intercom circuits when used with Dante-compatible products. Using Dante audio-over-Ethernet technology with AES67 support, the Model 5422 provides the flexibility to be used in a variety of broadcast-related on-air, talent cueing (IFB), audio mixing and specialized interfacing applications. The unit features low-latency 32-bit digital processing for excellent sonic quality.

Unlike general-purpose Dante digital matrix devices, the Model 5422 provides a set of audio input, processing, routing and output resources that can be optimized to allow direct support for many commonly-required broadcast and intercommunications functions, such as intercom, talent cueing and interfacing functions.

Only a power source and an Ethernet network connection are required for the Model 5422 to provide a powerful set of resources for a variety of Dante installations. These include fixed and mobile broadcast facilities, post-production studios, commercial and educational theater environments and entertainment venues. It is compatible with many

Dante-compliant devices — intercom beltpacks from Studio Technologies, such as the two-channel Model 370; the recently-announced Model 371; and the four-channel Model 374. When used in conjunction with the 5422, the Studio Technologies' Models 214, Model 215 and Model 216 Announcer's Consoles can be flexibly configured to support many on-air and live-event applications. The Model 5422 will function directly with these and other Dante-supporting devices, including matrix intercom



systems, audio consoles, wireless intercom base stations and commentator consoles.

The Model 5422 is available in two versions — one with 32 input and output channels and the other with 64 input and output channels. Dual Gigabit Ethernet interfaces allow switched, redundant and split Dante operation, with web-based configuration and network-enabled software updating. The unit features a lightweight enclosure with single rack-space (1U) mounting and powering by way of AC mains and 12 volt DC.

www.studio-tech.com/product_m5422.html

VITEC

MGW Ace Encoder and Decoder

Highest Quality, Portable End-to-End HEVC Streaming Solution

VITEC's MGW Ace Encoder and Decoder is the industry's first entirely portable, hardware-based end-to-end 4:2:2, 10-bit HEVC encode/decode hardware-based streaming system. Meeting the most rigorous requirements of today's broadcasters and other video streaming operators and delivering the highest-quality news on the go, VITEC takes the benefits of HEVC encoding out of the server room and into the field by integrating the highest HEVC quality codec available in a professional appliance. VITEC's video contribution solution transmits flawless video streams in the highest possible quality using the internet, eliminating the high costs associated with satellite infrastructure or dedicated networks to get data to major distribution points. The powerful yet compact MGW Ace point-to-point broadcasting contribution solution sets industry standards by providing pristine video quality with its HEVC (H.265) bandwidth-efficient compression as well as legacy H.264 encoding capabilities.

The MGW Ace appliance is the industry's first 100-percent hardware-based HEVC portable device for encoding and streaming video. It provides pristine video quality with its HEVC (H.265) bandwidth-efficient compression as well as legacy H.264 encoding capabilities. With a wide selection of I/Os and low power consumption using VITEC's second-generation HEVC compression chip, it's a perfect solution for streaming video, audio and KLV metadata while in the field or on the move. The MGW Ace boasts a real-time H.265 4:2:0 and 4:2:2 hardware compression chip for streaming broadcast-quality video up to 1080p. Input interfaces include 3G, HD/SD-SDI, HDMI, DVI and composite. The unit is also the first HEVC hardware encoder to feature intelligence, surveillance and reconnaissance metadata processing with KLV

and STANAG support conforming to MISB and NATO requirements. A secondary MPEG-4 H.264 chip provides support for legacy decoders and proxy streaming. The included Pro-MPEG and Zixi™ technologies offer one- and two-way error correction protocols for broadcasting artifact-free over public networks securely and reliably.

The MGW Ace Decoder delivers broadcast-quality decoding of HEVC streams up to 1080p60 4:2:2 10-bit, supporting the most demanding and diverse video streaming use cases. The single-channel HEVC decoder offers a robust panel of best-in-class connectivity options including



12G-SDI, HDMI 2.0, separate SD-SDI and composite outputs, which can be activated simultaneously. Targeting broadcast setups, the appliance boasts two pairs of audio decode, carried over SDI/HDMI as well as separate analog balanced or unbalanced stereo audio and digital AES outputs. Feeds can be received from two configurable Ethernet ports to match any network topology.

When the MGW Ace Encoder and Decoder are paired together, they become a fully hardware-based end-to-end 4:2:2 10-bit HEVC encode/decode streaming solution, offering the perfect turnkey HEVC solution for delivering bandwidth-efficient, artifact-free video streaming over any network, including the internet, with embedded Pro-MPEG FEC or Zixi™ error-correction capabilities for broadcasters, corporate IT, military units, and government agencies. As a result, the solution reduces operational expenses and extends the reach of video services to remote destinations with bandwidth constraints.



www.vitec.com/solutions/point-to-point-video-confidence

ASPERA, AN IBM CO.

Aspera Files SaaS

A Multi-Cloud SaaS Platform for Media Collaboration, Transfer and Streamings

Aspera Files is a breakthrough SaaS platform for high-speed media collaboration including large file transfer, sharing and now live streaming from any public cloud or on-premise storage. Fully managed by Aspera, Files allows organizations to instantly onboard and start sharing media from any environment via a “single pane.”

Files uses Aspera’s FASP® technology to overcome the fundamental size, speed and distance limitations of traditional transfer and streaming technologies. FASP provides distance independent transfer speed (regardless of network round-trip delay and packet loss), and predictable live streaming over commodity internet WANs.

Transfers are direct with all public and private cloud object storage, and have no content size limits.

As a result, Files offers breakthrough capabilities for distributed media management:

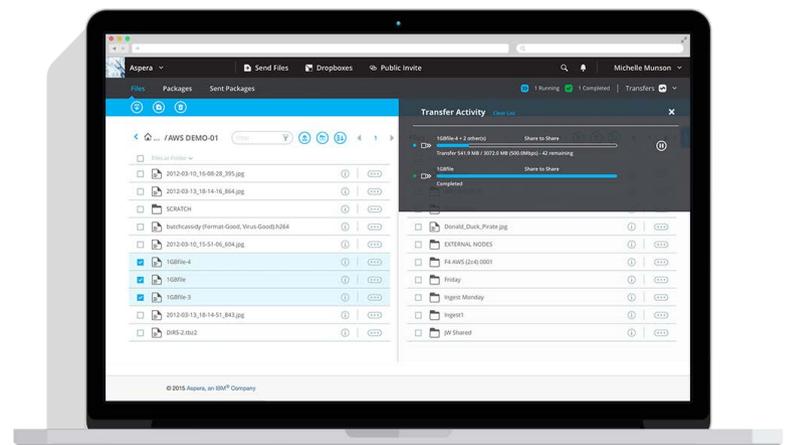
- No Size Limits — Move any size or number of files and data sets
- Maximum Speed — Send reliably at maximum available bandwidth over global WANs and ingest live video without glitches or delays
- Support for Any Storage — Open to any infrastructure combination of on-premises and in the cloud for direct access and high-speed transfer
- Powerful Security — Comprehensive built-in security including fine-grained user access control, collaboration settings and encryption on the wire and at rest
- Automatically Scales — Built-in elastic scaling supports variable transfer throughput and storage
- Instantly Available — New organizations onboard instantly with private, branded project-based sharing

First launched in 2016, Files now introduces dramatic expansion through a new Streaming Service option, and the following new capabilities:

- Files Streaming Service allows Aspera nodes to ingest live video streams through Files and distribute streams to browser clients via a lightweight plugin. Based on the FASPstream technology, which transmits live broadcast-quality video over internet without glitches, the new architecture can transport any HTTP/TCP or UDP video stream between media sources and clients with high quality and without modifying the media workflow.
- New Aspera Drive and Mobile Apps for iOS/Android extend collaboration possibilities for desktop and mobile users. Aspera Drive provides in-desktop Files access for remote transfer, sync and package exchange on Windows and OS X. New Check-in/Check-out options allow users to download a local copy of files to make changes exclusively and check-in to replace the master version. New remote Share-

to-Share transfers allow users to move content between global storage in the desktop, and a new OS X finder mount seamlessly opens remote files and saves local files for check-in to the infrastructure.

- New Files Express Mode is an ultra simple interface for sending and requesting large files and folders, activated with a simple toggle from full Files mode. Users can drag and drop to send packages with per-package expiration and encryption, and invite others to send to them with one-click personalized invitations. A convenient retractable side bar allows users to preview incoming packages and download contents, forward previously sent packages, and review, modify and resend invitations.



- Seamless integration with the new Aspera Transfer Service, a hosted, multi-cloud transfer service that enables secure high-speed transfer of large files and data sets across cloud infrastructure. Customers can instantly add ATS subscriptions directly to their Files organization to securely share their cloud storage on AWS, IBM Cloud, Azure and Google Cloud (coming soon).
- New Subscription options with pure pay-as-you-go and volume commitment options ideal for the smallest startup or the largest enterprise.
- Self-service Trial and Purchase available directly from the Aspera Online Store.
- Many features enhancements (more than 30) around Collaboration, Security, Storage and Transfer Management, File Management and User and Workspace Management.

ASPERA, AN IBM CO.

Aspera Transfer Service

Multi-Cloud Multi-Tenant Service for Transferring and Streaming Information

Aspera Transfer Service (ATS) is a hosted multi-tenant software service running in the cloud that enables high-speed upload and download of large files and data sets directly into cloud object storage. Using the patented Aspera FASP® high-speed transfer protocol, customers can quickly and predictably move data of any size over any distance at line speed.

Aspera has wrapped its reliable, secure, ultra-fast transfer software into a service that is hosted and managed by Aspera’s team of experts in a high-availability environment. Subscribers to the service benefit from Aspera’s direct-to-cloud transfer technology that writes data directly to object storage during the transfer so that the information is immediately available upon completion of the transmission. ATS transfers are protected by enterprise-grade security, which authenticates and authorizes transfer clients. All data is sent over an encrypted wire and the files are encrypted when at rest. The platform performs data integrity verification for each transmitted block, and will automatically retry from point of interruption on failure. Its management interfaces provide precise control over the transfer network, allowing users to pause, resume and report upon transmission operations.

By subscribing to ATS, customers can gain access to their cloud storage in a matter of minutes. The product provides out-of-the-box support for all AWS and IBM Bluemix infrastructure regions and data centers. Early access is available for Azure and support for Google Cloud Storage is coming soon. The Aspera technology platform also ties in directly to advanced cloud storage features such as S3, IBM Cloud Object Storage, Infrequent Access, Reduced Redundancy, KMS (Server side key) and Cool Storage.

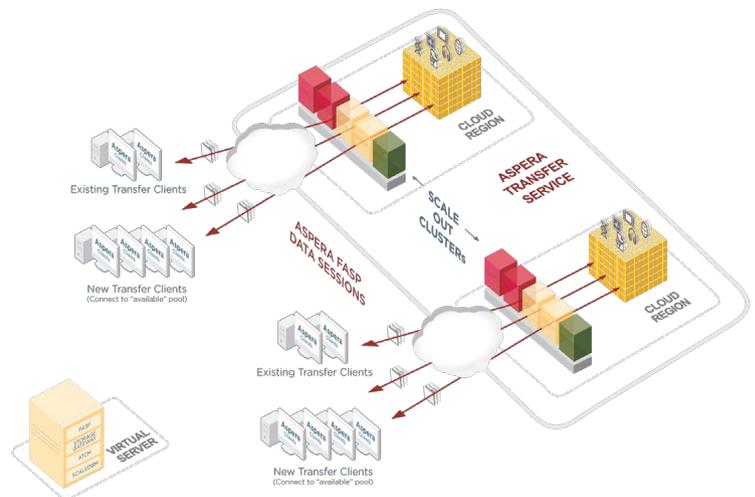
ATS is ideal for high-speed, large-volume, secure content ingest directly to and from cloud storage. Using Aspera products or an Aspera API, users can transfer and synchronize files at maximum speed directly to scale-out cloud object storage. Unlike TCP-based transfers, Aspera performance is independent of network round-trip delay and packet

loss. Data can be transmitted 10 to 100 times faster, limited only by the platform I/O.

Adaptive bandwidth control automatically adjusts the transmission speed to match available network bandwidth and available I/O throughput, ensuring transfer speeds are highly predictable and scale linearly with increases in bandwidth.

Seamlessly scaling, without any ac-

tion required by the customer, the service can support many thousands of concurrent sessions running in parallel. This functionality speeds the transfer of directories containing very large numbers of very small files, as well as transfers of extremely large files and directories.



ATS fits into any deployment environment (on premise, cloud, hybrid). Customers can gain instant access to cloud storage by leveraging the service’s interoperability with core Aspera products. The service supports all modes of data transfer (command line, interactive GUI point-and-click, browser, APIs, hot folder automation, one-way sync and bidirectional sync), and can be managed from the Aspera Files, Shares and Faspex web applications, whether they are hosted on premises or in the cloud.

Customers choose between two payment models when subscribing to the Aspera Transfer Service. The pay-as-you-go option charges for the data transferred during the month. An annual pre-commit subscription offers discounted rates on transfers that can scale up to multiple petabytes per year.

ATS solves a wide variety of cloud storage challenges:

- Rapidly migrate very large files and data sets to, from and across clouds
- Connect Aspera Files and Aspera applications to existing cloud storage with scale out transfer capacity and high availability
- Embed ATS into existing cloud applications for fast, easy, high speed transfer and management of cloud data.



asperasoft.com/cloud/aspera-transfer-service

BITTREE PATCHBAYS

12G+ Mini-WECO Coaxial Video Patchbay

High-Performance, Single-Link Patching Simplifies Next-Gen Infrastructures

Delivering high-bandwidth performance for SD-SDI, HD-SDI, UHD-SDI, HDR, 4K and 8K single-link video applications, the new 12G+ Mini-WECO (Midsize) Coaxial Patchbay family extends Bittree's hallmarks of design excellence and trusted reliability to next-generation video infrastructures.

While adoption of 4K workflows in the broadcast and professional audio/visual industries continues to accelerate, the most common mechanism for transporting 4K content in production and distribution environments has been quad-link connectivity, comprising four coaxial cables for each 4K feed. The exceptional performance and precision of Bittree's 12G+ patching systems enables reliable handling of 4K over a single 12 Gbps link, dramatically simplifying cabling for studio, master control, A/V system and mobile production deployments while quadrupling the number of 4K channels that can be routed through each unit.

The higher bit rates and frequencies needed for transporting 4K and greater signals on a single link require greater attention to the cables, connectors and connectivity equipment in the chain. Bittree's 12G+ mini-WECO patchbays are engineered to deliver exceptional performance and exceed SMPTE specifications including SMPTE 292M, 424M, ST2081-1 and ST2082-1.

Offering 75-ohm impedance with low return loss and ringing out at 24 GHz, the future-friendly 12G+ patchbays support data rates up to 48 Gbps and provide a tremendous amount of clean headroom for not only 4K, but also 8K, HDR and higher bit-rate applications. To help further maximize signal integrity, Bittree can also supply high-quality, 12G+ rated connect-

ing patch cables, terminators and looping plugs.

The new 12G+ mini-WECO patchbays are offered in five configurations to meet a flexible range of user connectivity and space requirements: 1x32 in 1RU of rack space; 2x32 in 1RU, 1.5RU or 2RU models; and 3x32 in a 3RU form factor. Designation strips enable easy labelling and identification. Distinctive, stylized green color-coding of the panels, patch cords,



termination, and looping plugs easily conveys their 12G+ compatibility.

The panels and connectors are designed and built to exacting standards to withstand the demands of heavy-usage applications and rigors such as the vibration occurring in mobile production environments. Precision-machined phenolic insulators electrically and mechanically separate the jacks from the front panels. The units are constructed of 3/16-inch machined aluminum with a durable powder-coat finish and stylized front panel design.

Like all of Bittree's renowned audio, video and data patching systems, the 12G+ mini-WECO coaxial video patchbays leverage the company's 39 years of proven engineering expertise, and are designed, built and tested to rigid quality standards in Bittree's state-of-the-art facility in Glendale, Calif. The 12G+ patching systems are available immediately, and are backed by expert customer service from Bittree's dedicated sales engineers.



www.bittree.com

IHSE USA

Draco vario OPS+ KVM Extender for Display

OPS+ KVM for 4K DisplayPort KVM Using Intel's Open Pluggable Specification

IHSE created the Draco OPS+ KVM to support the growing number of digital signage and command-and-control installers implementing displays equipped with Intel's open pluggable specification (OPS+). It is based on IHSE's Draco Ultra DisplayPort CON extender and features video and USB-HID display components for KVM.

The Draco OPS+ package design is based on OPS+, which Intel® created to help standardize the design and development of ultra-high-definition digital signage devices and pluggable media players. It was launched as a way to bring standardization to a highly fragmented media player market. By utilizing an Intel-owned Arria® processor and creating a simplified architecture, OPS+ has allowed for more cost-effective design, deployment and management of display devices such as IHSE's OPS+ KVM.

As large video displays become more centralized to business operations, it becomes more critical that manufacturers prioritize what works best for the end users. In many cases, users add a typical KVM extender module to connect the display back to the computer source over long distances. However, current remote extender concepts add an additional box, which increases the amount of cables and power connections needed. This adds an additional layer of hardware maintenance and more possibilities for a security breach. With the pluggable slot design of OPS+, a higher level of security is possible while reducing the need for additional power. By repackaging the Draco ultra console (CON) extender to fit the OPS+ slot, IHSE created a module design that effectively lowers the deployment and field maintenance costs associated with connecting workstations or digital signage over long distances. From the OPS+ extender CON unit, a duplex fiber cable can increase the distance between the display and source by up to 10 kilometers. By incorporating a KVM matrix switch, multiple OPS+ extender modules can be easily managed over IHSE's Tera Viewer GUI. The KVM switch's built-in control methods allow permission-only access to touchscreen

displays, podium presentation equipment, or an operator's workstation before granting access to the CPU.

Normally system installers and users of large video walls are the ones who are looking for affordable and reliable extender solutions that support 4K video and KVM/touchscreen interfaces. Although many commercial enterprises are quickly moving to 4K resolutions, they are still strapped with limited bandwidth access and minimal budgets for up-



grading to higher resolutions. However, new compression technologies, such as the Fraunhofer IIS lightweight image coding technology (Lici®) used in IHSE's OPS+ KVM extenders, yield higher color accuracy and improved image quality to overcome the limitations of traditional video compression techniques. IHSE's new OPS+ Ultra DisplayPort extenders can manage up to full 4K (4:4:4) 60 hertz at 30 bits without latency.

With KVM systems like those from IHSE, it is not necessary to configure OPS+ extender endpoints on the network. Using IHSE's flex-port technology, users simply connect OPS+ modules to the matrix switch, and the switch automatically configures them for the port assigned. There is no need to create IP-mapping structures, thus eliminating the need for IP addressing of each OPS+ device. As future displays are added, a technician can simply attach an OPS+ module to an open port on the KVM switch and be operational in minutes.

www.ihseusa.com



JVCKENWOOD USA CORP.

PB-CELL200 ProHD Portable Bridge

Portable 4G LTE Bonded Cellular Uplink

Carry it anywhere! This portable bridge is a powerful bonded cellular hotspot that features Peplink's patented SpeedFusion™ technology that allows you to reliably stream your JVC camcorder signals to any destination on the internet. Unlike typical bonded solutions, the PB-CELL200 enables you to stream live video from multiple cameras to HD-SDI decoders or servers at a central location. It comes with dual

cellular modems with redundant SIM slots letting you use up to four different cellular providers for bandwidth bonding, data overage protection or eliminating blind spots.

Dual-band Wi-Fi gives you two independent high-speed networks that work together (2x2 MIMO) to maximize throughput. In addition to live streaming, it functions as a secure hotspot for connecting computers, tablets, smartphones and other devices to the internet or to your enterprise LAN with a secure VPN. When used with IP-capable JVC ProHD, PTZ and 4KCAM cameras, you now have not only streaming, but full remote camera control and IFB audio on select models. JVC's Wi-Fi-equipped cameras connect to the unit without cables leaving you free to position the Bridge in its most optimal location.



Main Features:

- Robust, bonded LTE connection for multiple streaming cameras, encoders and decoders
- Totally self contained — no modems strapped on
- Powered from Anton-Bauer battery (optional) or from included AC adapter
- Dual embedded cellular and redundant SIM slots
- Accepts SIMs from Verizon, T-Mobile, A.T.& T. and Sprint
- Aggregates up to four network links (Cell x2, plus Wi-Fi or Ethernet)
- Powerful omnidirectional fiberglass encased high gain (3–4 dB) cellular antennas
- Wi-Fi connection to JVC cameras provides location flexibility
- Webcasting HW/SW devices via LAN or Wi-Fi
- Stream live video to JVCVIDEOCLOUD, Facebook, YouTube or any other CDN
- Powerful internet hotspot for computers, smart devices
- Two RJ-45 connectors for wired LAN connections.
- Extends enterprise LAN into the field with a secure VPN
- GPS receiver provides location to central server
- Full-command console control of all of your cameras and remote cellular bridges
- Economical cellular data packages available from JVC
- Global LTE Advanced and FirstNet options available
- All ProHD Bridge products are FCC/CE-certified and comply with RF exposure absorption (SAR) safety standards.



pro.jvc.com

JVCKENWOOD USA CORP.

KY-PZ100 IP-Based PTZ Camera

Robotic PTZ IP Network Video Production Camera

The KY-PZ100 is a robotic pan, tilt and zoom video production camera. It's the first PTZ camera that features JVC's unique IP communications engine providing network connection via Wi-Fi*, 4G-LTE*, or cabled LAN. It's designed to be used as a stand alone remote camera or as part of a multi-camera system in both studio and field environments. In addition to its 3G-SDI and HDMI outputs, it is also capable of reliably streaming 1080i/60, 1080p, 720p, and 360p video with two-channel audio — all with minimal latency and forward error correction. Camera control is possible from a web browser or with the dedicated RM-LP100 remote control panel, or from a variety of remote units using standard protocol. The camera also includes on-board HD recording at up to 50 Mbps to a micro SDHC/SDXC card with the ability to upload the recorded files to an external server.

The KY-PZ100 features JVC's highly accurate direct drive mechanism for smooth, quiet and precise positioning with up to 100 preset positions. Positioning can be performed at a range of speeds from very very slow to very fast while retaining pin-point accuracy (within 0.03°). A newly developed 1/2.8-inch image sensor and 30x optical zoom lens produce superb broadcast-quality images even in low light environments. The camera's Wide Dynamic Range mode provides clear natural foreground images even under challenging highlight conditions.

Power the camera, control it, and stream to the world all from a single ethernet cable. Or go wireless. Just provide power to the camera, plug in a Wi-Fi adapter or LTE modem, and you'll have the world's most convenient, high-quality robotic camera that can be placed virtually anywhere, stream full HD, and be controlled from anywhere in the world!

Key Features:

- 1/2.8-inch CMOS sensor (2.2 million pixels)
- Optical zoom lens with 30x zoom ratio (4.3-129mm, f/1.6~4.7)
- 12x digital zoom
- Autofocus and image stabilization built-in.
- Fast f/1.6-4.7 maximum aperture for excellent low light
- High sensitivity mode (down to 0.02 lux, color)
- Night mode (0.003 lux, BW)
- Direct drive motor for smooth, quiet and accurate pan and tilt
- PoE+ equipped: LAN cable enables simultaneous streaming, camera control and power supply
- Full HD 1080p, 1080i, 720p video
- Simultaneous 3G-SDI and HDMI and IP digital outputs
- Two-channels audio (or one-channel balanced audio)
- USB host connection for Wi-Fi or 4G LTE adapter



Advanced IP Communications Capability:

- Streaming with SMPTE 2022 forward error correction
- Advanced Zixi reliable communication with ARQ, FEC and adaptive bitrate control (Requires optional Zixi license) Low latency streaming
- Standard control protocol over LAN (enables PTZ control by TriCaster and other products)
- RTMP streaming directly to content delivery network (JVC VIDEOCLOUD, YouTube, Ustream, etc.)
- PELCO-D control protocol via RS-422/485
- Micro SDHC/SDXC memory card recording (H.264 50Mbps)
- Remote control via RS-232C / RS-422, or via IP controller
- Can memorize 100 preset settings and positions
- Can be mounted upside-down or right-side-up

* Wi-Fi and 4G-LTE require optional external adapter.

MULTIDYNE FIBER OPTIC SOLUTIONS

VB Series

Breaks the Paradigm for Signal Density, Granularity & Flexibility

MultiDyne's focus on adaptability across any fiber transport scenario breaks new ground with the VB Series, a configurable, high-density platform engineered to meet virtually any connectivity requirements.

The highly durable, compact VB Series is based on a common platform that is built to order from a diverse array of modules across video (including 12G and 4K), audio, genlock, timecode, GPIO, tally, serial data and Ethernet. Based on the model selected, the miniature card cage can house up to 18 cards, with options that include single- and dual-channel video; as well as 4x4 audio. Based on the customer's architecture, the VB Series can support either proprietary MultiDyne cards or interoperate with openGear modules cards — the latter of which provides the added benefit of SNMP-based openGear DashBoard monitoring.

The thoughtful engineering of the VB Series reduces production and delivery time. Instead of requiring a purpose-built product to meet a customer's connectivity requirement, MultiDyne engineers can discretely test each module, and configure them into a finished product configuration for shipping within one week or less. This flexibility will also allow MultiDyne to build in future modules that extend beyond fiber transport and into conversion, including HDMI-to-SDI video; and AES-to-analog audio (and vice versa in both cases). Additionally, the platform will evolve to accommodate UHD scaling and signal conversions as the series expands, including conversions of 4K quad-link input signals to 12G and HDMI at the output.

The VB Series' flexible design also offers unparalleled adaptability to the specifications of new camera models as they come to market. Several VB Series models already perfectly adapt to signals types and counts on POV and robotic PTZ cameras from Blackmagic Design, Canon and other manufacturers, ensuring a fiber transport solution that works right out of the box.

The compact VB Series architecture (7.25x5.75x1.75 inches) means it can easily be mounted to POV box cameras and robotic PTZ heads, with models a platform initially supporting between 16 and 1224 fiber transport connections for video, audio, data and Ethernet. Along with the ability to

transport a full complement of multichannel camera signals, including 4K quad-link and 12G, optional supply power from the base unit can be sent to the transmitter and camera via SMPTE hybrid cable. This enables flexible setup, strike and mobility by ensuring the entire camera position is free of power outlets.

The flexible mounting solutions extend to rack-mounting (such as on



a mobile product truck or a temporary studio) and wall-mounting. The latter can be especially useful in sports production, where a receiver can be installed behind a display screen to show live feeds from throughout the venue. However, the VB Series is also built as a rugged throwdown unit that can be positioned anywhere in the field for live content acquisition and transmission back to the receive site. Its exceptional bandwidth accommodates SDI rates from 5 Mbps all the way up to 3 Gbps (1080p) 12G uncompressed, making the VB Series ideal unit for mobile production trucks and other customers that need to trunk multiple uncompressed SDI signals over fiber.

MultiDyne's intensive research, development and engineering efforts laid the foundation for the VB Series. A great deal of research and development was put into module configurations and functionalities, along with a detailed testing process to confirm operability of each design and specification. Along with end customers, MultiDyne's reseller network can count on optimal reliability and performance for each module based on the rigorous testing and confirmation process for quality assurance.



www.multidyne.com

SHURE INC.

Axient Digital Wireless System

Shure's Most Advanced Wireless Platform

Shure debuted the Axient® Digital Wireless System at the 2017 NAB Show. As the new premier wireless system in Shure's successful portfolio, Axient Digital builds on the superior benefits of the company's UHF-R®, ULX-D® and Axient wireless systems to create the most advanced wireless platform to date, suited for all professional productions and situations. Catering to evolving customer needs — especially in an environment of continued RF spectrum pressure — Axient Digital provides high-performance RF, exceptional audio quality, command and control, and hardware scalability.

Axient Digital features a receiver that is compatible with its two transmitter offerings, the AD Series and ADX Series.

AD Series transmitters deliver a tremendous level of core product benefits including exceptional RF performance, digital audio and networking. Axient Digital ADX Series transmitters additionally incorporate ShowLink, which provides real-time control of all transmitter parameters along with interference detection and avoidance. The ADX Series also includes the first micro bodypack with an integrated self-tuning antenna, enabling greater concealment and comfort.

Ideal for a variety of users and applications, Axient Digital features numerous user-friendly features and benefits:

- **High-Performance RF** — Incorporating all of the capabilities that professional productions demand, Axient Digital is designed for maximum signal stability. It features true digital diversity with Quadversity™ and a robust high density mode that delivers superior spectral efficiency, significantly mitigating the potential for signal fades or interference that can cause drop outs. Quadversity antenna mode enables users to place sets of diversity antennas in different zones, or double the number of antennas in a single zone, to improve RF signal-to-noise in challenging environments.
- **Audio Quality** — Featuring transparent digital audio via Dante, AES67 and AES3, Axient Digital has a 20 Hz to 20 kHz range with a flat frequency response and accurate transient response. Axient Digital also boasts wide dynamic range and an industry leading 2ms latency from the mic transducer to the analog output.
- **Command and Control** — Axient Digital is compatible with Shure's Wireless Workbench® for efficient control and configuration, as well as the ShurePlus™ Channels App for optimal spectrum management and frequency monitoring. The system's Dante Cue and Dante Browse features enable headphone monitoring of high-fidelity, true audio output from any Dante-enabled connected device. Additionally, Axient Digital's networked charging capabilities provide a suite of smart,



high-performance batteries and chargers.

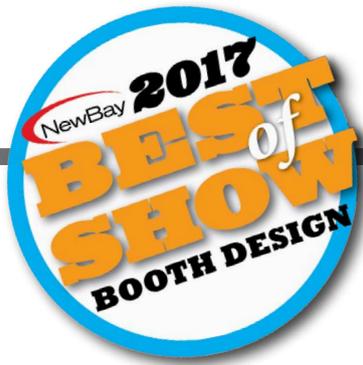
- **Hardware and Scalability** — Axient Digital's wide tuning range of 184 MHz for all transmitters and receivers covers an extended range of spectrum and simplifies inventory. Dual and quad receiver options combined with a common receiver platform supporting both AD and ADX transmitters, maximizes user flexibility and scalability.

Axient Digital is compatible with the Shure Battery Rack Charger (SBRC), which supports up to eight rechargeable batteries in a single, compact rack space. Providing a seamless, tour-ready battery charging and storage solution, the SBRC features an easy-to-read front panel that displays critical battery parameters, including charge status, time-to-full and battery health indicators. When connected to a network, Shure Wireless Workbench and ShurePlus Channels software provide remote monitoring of the SBRC to track battery status.

Given the increasing challenges of RF spectrum, it's essential that users have access to a system that can deliver the critical audio inputs of a production reliably over the air.

With unparalleled RF stability and spectral efficiency, Axient Digital offers a variety of users the flexibility to work in the available spectrum, whether the number of channels required is great or small, and provides the pristine sound quality that today's productions demand.

www.shure.com/axient-digital

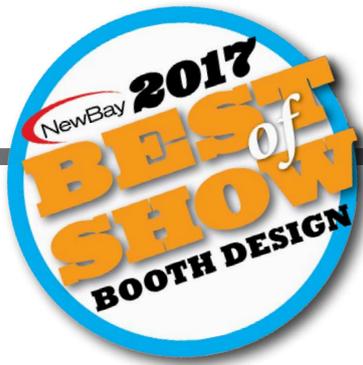


ANVATO (NOW PART OF GOOGLE CLOUD)

This is the first time Google is exhibiting at the NAB Show, and in addition to our cutting-edge technology, our booth featured cool art, virtual reality demos and other Googley elements.



www.anvato.com



CANON U.S.A. INC.

The Canon booth showcased its line of professional 4K and high-definition imaging equipment for motion pictures, television production, video content creation and still photography at booth C4325. The Canon booth featured demonstrations and scenarios to showcase the breadth of Canon imaging equipment in a variety of live

production and filmmaking environments. From stadiums to studios, houses of worship to on-location breaking news, Canon demonstrated its wide variety of cameras, lenses, reference displays and projectors in all manner of production scenarios.



www.usa.canon.com



CHYRONHEGO

ChyronHego was proud to feature an all-new booth configuration at the 2017 NAB Show. Booth SL1210 included several key features designed to reflect ChyronHego's market leadership and growing influence in the realm of all-software-based, IT-driven solutions for live broadcast production. Some of these features include:

- Very clear branding that makes the booth highly visible, even from a long distance
- A perfect mix of private meeting spaces, semi-private demo areas and highly visible demos on the show floor
- A large hospitality area on the upper floor that allowed our visitors to escape the buzz and crowds below
- A new "sports bar" hospitality area

reflecting ChyronHego's industry leadership in sports graphics solutions

- A diagonal design that allowed for easy customer access and flow through the booth
- Large and convenient areas for storing demo equipment and servers
- A highly optimized and efficient design that occupied a compact footprint of 50x50 feet.



www.chyronhego.com

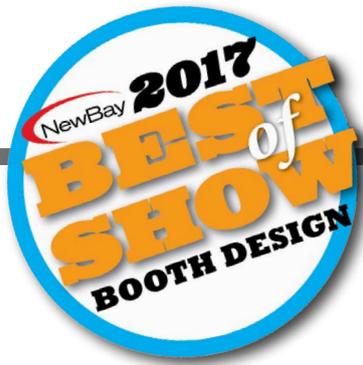


ENCO

Our new booth design provided the most efficient use of space to showcase our wide product range, while standing out with a unique appearance that gives guests an inviting and enriching experience. A clean look with clear branding and imaging of our company and the many products we offer while maintaining an open traffic flow was accomplished with this booth which still included space for private meeting areas and formal presentation space. This booth was able to accommodate over 15 large screen monitors and a staff of 20 people in a small foot print that was extremely welcoming

to visitors to not only see, but also interact with our solutions and staff. This booth made a statement, and was accomplished with a limited size and budget. The triangle tower design was envisioned internally and proposed to multiple booth design companies as the only way to fit everything in the booth that we needed with keeping an open and clean feel.





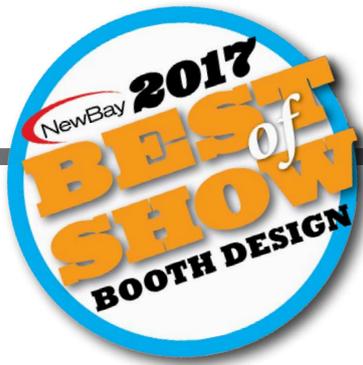
FLUOTEC

The FLUOTEC Booth C161 featured a modular approach for expositions that enabled understanding of the FLUOTEC lines of studio and production lighting. It also featured a high-rise lighting truss that emulated an actual television studio; a rain chamber to demonstrate the IP 65 all-weather capabilities of the STARMAKER; a central white light area to demonstrate the ifness or evenness of the high-quality beams; and also featured

three different production lighting training shows every day of the expo. "The Hollywood Lighting Style" featured master photographer Carlos Anadon who worked with makeup artists and production designers Marilyn, Pinup Girls, Film Noir etc.

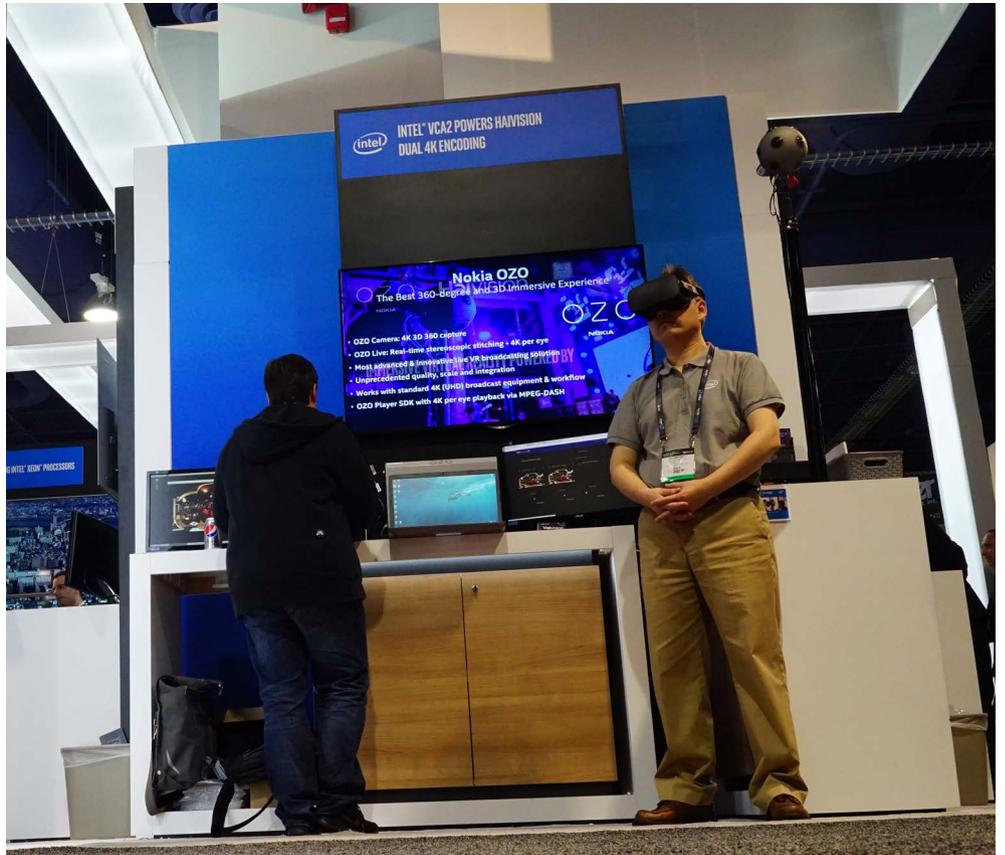


flutec.net/cinelight.htm

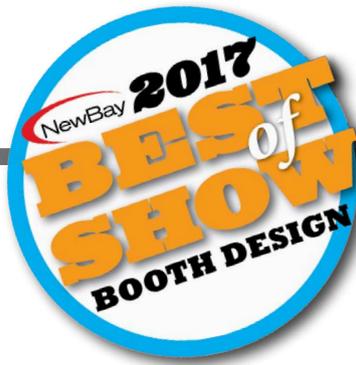


INTEL CORP.

VR 360 streaming demands the highest resolution. This demo showed a complete workflow originating with dual 4K streams from a Nokia OZO 360 degree camera. The streams are encoded to dual 4K by Haivision's KB 4K Encoder, powered by Intel® VCA 2, and streamed to VR headsets. Users experienced a remarkable high-resolution 360-degree immersive view of the exhibition hall.



www.intel.com/accelerators

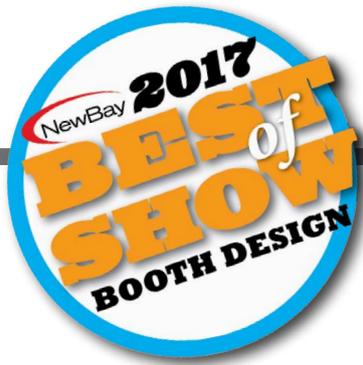


INTERRA SYSTEMS

Interra Systems' new booth design was built with modern aesthetics in mind. The use of wood, plex, colors, everything played well together — the wood added warmth while keeping the booth looking spacious with plex and white walls. It invited the visitor for an animated discussion in comfortable spaces. We used angles for the room walls, breaking the monotony of straight-line walls and giving an impression of a bigger area, while drawing visitors into the booth at the same time. The secondary hanging sign promoted the messaging and blended in well with corporate branding signages high up. We are very happy with the booth design and feel it contributed to a busy show!



www.interrasystems.com/file-based-qc.php



LG ELECTRONICS USA BUSINESS SOLUTIONS

Named the exclusive “Official 4K Ultra HD Display Provider for NAB 2017” by the National Association of Broadcasters, LG Electronics installed more than 150 advanced 4K screens, ranging from 43- to 75-inch, throughout the show for wayfinding, information and displaying stunning 4K video. Most noteworthy, however, is LG Business Solutions being selected to provide innovative and unique displays for the “Next Gen TV Hub: Powered by ATSC 3.0.” Co-hosted by ATSC, CTA and NAB, the Hub is the epicenter of all things related to the new broadcast standard.

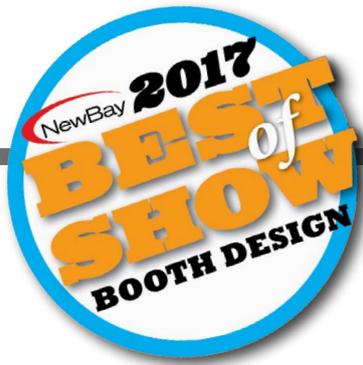
LG commercial displays represent the core of the exhibit design — meeting the industry’s primary goal of telling the Next Gen TV story in fresh new ways. Surrounding the top of the 35-by-45-foot booth were nine LG 86-inch Ultra Stretch Signage displays (86BH5C) daisy-chained together. Each display measures just over 7 feet long and about 2 feet high for an amazing 58:9 bar-type display. Compelling graphics and

animation — with ticker-type messaging, dramatic moving images and more, produced by Arland Communications — traverse across the LG Ultra HD ribbon display, drawing attendees into the booth and delivering core messages about Next Gen TV.

On the side of the booth facing the busiest aisle in the LVCC Grand Lobby was a dramatic videowall tower made up of a half dozen of LG’s 55-inch 55VH7B, the display that is redefining the video wall category. The displays have a narrow bezel width of 0.9mm, allowing them to be connected seamlessly — in this case stacked floor to ceiling. They created a powerful and impactful image for an immersive experience that captured NAB Show goers’ attention — with bold animated graphics depicting the 20-plus building blocks of the ATSC 3.0 standard, literally being built from the ground up as a towering skyscraper. For the first time, the joint industry booth also used LG’s 10-inch displays for messaging, eliminating posters and graphics.



www.lg.com/us/business



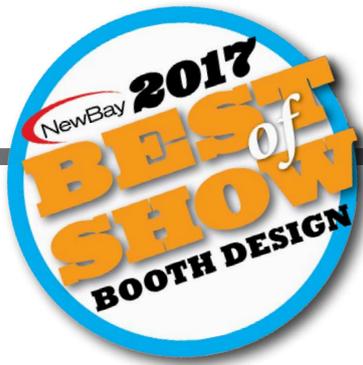
RCS

The RCS/Floral stand included creative architecture, bold graphics and interactive elements for attendees. Lighting elements made RCS/Floral stand out from the rest with large fabric backgrounds in arches hung from the ceiling.

Private seating was available for meetings and a central presentation area provided education on the product offerings. For a more intimate look, separate workstation spaces were available.

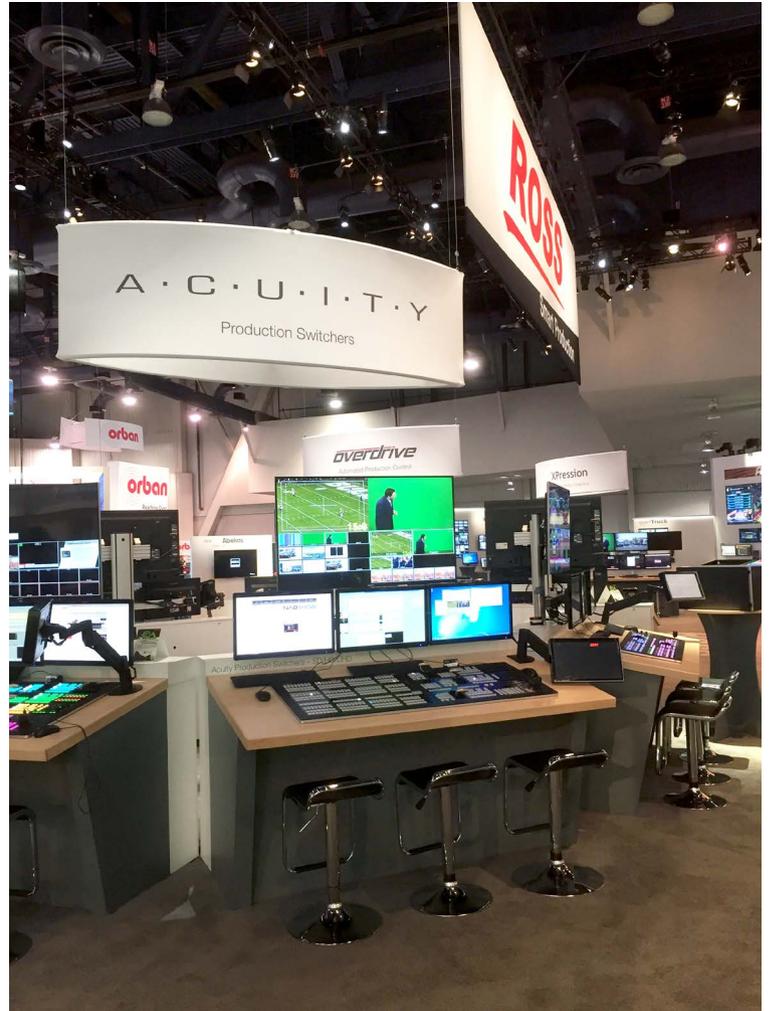


rcsworks.com



ROSS VIDEO

The Ross booth underwent a significant branding and operational transformation this year, making Booth N3706 the perfect fit for the 2017 Newbay Media Booth Design Award. Aside from the branding facelift (which is significant on its own), the new design allowed for the addition of seven+ new products (plus variations), two recently acquired companies, a new camera shooting gallery, increased meeting space, an expanded IP Networking area, plus allows visitors to experience the breadth of Ross' product and service offering from any place on the booth floor — all within the same booth footprint and budget as the previous year. This new design was based on a U-shaped booth structure with low workstation pods in the foreground, allowing full view of all areas of the booth from any vantage point. The reception area was central, along the back edge of the space, and was visible from any point on the floor. Costs were managed by simplifying the design, re-using existing structure (based on the same Octanorm structure that we invested in over the past 14 years), and utilizing standard size materials where possible. This allowed us to increase our product and service offerings while maintaining the same shipping costs (no additional trucks) and reducing onsite installation and electrical labor. In the end, this new design allowed us to add several new products and improve our visitors experience without increasing our booth space or costs.



www.rossvideo.com



SONY ELECTRONICS

Each year Sony's booth at the NAB Show is among the largest and most visited among the exhibitors at the show, with a majority of attendees making Sony the top stop on their list. This year, Sony added new elements to the exhibit to enhance the experience of attendees. The presentation stage was anchored by Sony's massive 32x9 feet, immersive, high-resolution Canvas display system. Another new element is Sony's Production Data Center, which will showcase the power of IP workflows for live and news production, as well as content management. The 2017 Sony exhibit was centered on four distinct areas of focus: Image Capture, Media Solutions, IP Live and High Dynamic Range and each area housed a wide array of Sony's latest technologies and solutions. In addition, Sony debuted a new "Pro USA" mobile app, which is a resource for users and fans of Sony's professional technologies and includes product informa-

tion and the ability to explore tradeshow. From a booth map and description of booth areas and features, to a live presentation schedule and push notifications, the new app offered attendees and those who couldn't be at the show with a way to guide themselves through Sony's booth and educate themselves on the exhibit and its offerings. Sony's booth was enabled with beacon technology to provide app users with information about targeted areas of the booth, when they are in that physical location. For social engagement, Sony's booth features a large presentation area for guests to hear about the latest technologies and trends, and these stage presentations were livestreamed to the general public. In addition, live booth interviews were streamed online. Sony's exhibit is also home to a social photo booth for show attendees to enjoy.



www.sony.com