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John O'Brien

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PO Box 1045, Ascot Vale, VIC, 3032  
Phone +61 (0)407 735 920  
Email [jason@vcscreative.com](mailto:jason@vcscreative.com)

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# The P.A. People Celebrates Fifty Years!

by Chris Dodds, Managing Director, The P.A. People

## It all started in the early 1960s in a garage in suburban Enfield, NSW.

What started back then as Christian Sound (incorporated as CS Services) has grown to be one of the most well respected and diverse professional audio and AV solution providers around.

The company was first incorporated on 2nd July 1971, 50 years ago!

Back then the company was focused on the needs of the local church, schools, government and community events. Professional audio was in its infancy, and the company resorted to the manufacture of many of the products it needed, ranging from multichannel mixing consoles and amplifiers, though to the now iconic range of PEM self-powered portable loudspeakers. Installations in Sydney churches and schools numbered in their thousands through those times, and it is still not uncommon to find an installed speaker cabinet in a church with the CS trumpet logo attached.

The company thrived and continued to develop unique solutions to sound reinforcement challenges well before commercial solutions were available. Large scale three-way loudspeaker cabinets were designed to provide sound reinforcement for a crusade at Randwick Racecourse, and the original 'Bose Trees' were created to provide a novel rigging solution for indoor and outdoor spaces.

After some time the company adopted 'the p.a. people' as a by line under the CS Services brand, which around 1981 evolved into the adoption of The P.A. People as the company's trading name.

### Concert Production

In 1985 we secured the contract to provide the sound systems for Carols in the Domain and the Sydney Festival Concert Series including the Australian Opera and the Symphony Under the Stars, a contract

we held for the next ten years. Our unique approach was based on a larger version of our Bose trees, building on the concept originally developed years earlier. Our concert production arm was born and thrived for the next ten years. In 1990 we ventured into the world of concert touring systems with the purchase of a significant Turbosound TMS3 system powered with custom designed Australian Monitor amplifiers. The system was selected for their Australian tours by the world's elite artists including Gloria Estefan, Diana Ross and James Taylor. We eventually chose to exit the touring space and the concert production arena more generally in 1995.

### Product Development

The late 1980s saw the product manufacturing arm of the business develop into a separate but wholly owned entity named Creative Audio. Based in Brisbane, the business initially continued the production of mixer amplifiers and portable loudspeakers and then moved into the development of digital message storage and the ConcertCom



The shop in 2000

system prior to the opening of the venue in 1999. We are extremely proud of the fact that since that time we have operated the system for every event at the Stadium, upgraded the system on three major occasions, and serviced and maintained the systems throughout their life.

*Editor's Note: Norwest Productions provided audio production for the Games ceremonies, including augmenting the stadium system with their own PA, as specified by sound designer Bruce Jackson.*

**Event Communications**

The P.A People's involvement in the 'best games ever' also included sound systems installations for the Aquatic Centre, the RAS showgrounds and the Velodrome; the site wide PA systems in Sydney Olympic Park; the contract to deliver the entire temporary AV package for the 'non-competition' venues; along with the communication systems for the opening and closing ceremonies, and the majority of the sports venues.

What we had expected would be a once-off event has now become a very significant part of our business. Out of the remnants of our concert production business quickly rose what is now known as our event communications department. With five Olympic Games and countless other national and international events behind us, The P.A.

range of intercom products. Creative Audio also became adept at creating custom audio solutions for significant clients, two examples being the development of audio teaching systems for the School of Distance Education (School of the Air) in Queensland, and the replacement of the stage management systems for the Sydney Opera House. The company went on to create the Control Matrix audio paging system which achieved significant international success in the early 2000s. Control Matrix was the predecessor of the paging product now known as Vocia with the Creative Audio business eventually sold to Biamp Systems in 2008.

**Systems Integration**

The 1990s also saw The P.A. People move into larger scale systems integration activities with the securing of contracts to deliver loose equipment and control room infrastructure for the new Brisbane Convention and Exhibition Centre and the expansion of the Sydney Convention and Exhibition Centre.

And then along came the turn of the century, and with it the Sydney 2000 Olympics.

In 1997 The P.A. People successfully tendered for the supply and installation of the sound system for the new Olympic Stadium in Homebush. Under the watchful eye of the US consultants, we developed the design to suit Australian conditions and commissioned the

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People’s event comms team are known as one of the significant providers of large-scale production communications systems on the world stage.

**Innovation**

The company continues to be an innovator in the provision of venue infrastructure across Australia. We have worked in over 15 of the country’s major sports venues and countless theatres and performing arts spaces, designing and installing audio systems, production communications, stage lighting, IPTV systems, LED screens and video production equipment. In many of these venues our tenure incorporates repeat

engagements over periods spanning almost four decades.

Recently The P.A. People re-entered the audio production market with the acquisition of a significant inventory of Bose ShowMatch cabinets and Linea Research amplification. The systems have been deployed for corporate events in the International Convention Centre and for the opening of the Woman’s T20 Cricket World Cup, as well as regular support of the Sydney Kings basketball and Sydney FC football teams.

There have been many other significant projects along the way – the communications package for the Sydney New Year’s Eve

fireworks, the audio and radio systems for the Australian Formula 1 Grand Prix in Melbourne, and the design and fabrication of the iconic 3m high ‘AO’ LED logo for Tennis Australia.

**People**

Throughout our history, a trademark of The P.A. People has been our people. Many of the folk who grace our industry today cut their teeth with or at The P.A. People and we are proud of the legacy these folk have created – and there are some 200 of them that have worked for us in a full time capacity, not to mention hundreds more in a casual capacity. A big ‘Thank You’ to all who have worked with and for us – the company is clearly better for your contribution.

And lastly ‘Thank You’ to our customers and suppliers – we literally would not be still here after 50 years without you.

It is our intent to continue our celebrations of this significant milestone throughout the second half of this year, and we look forward to engaging with each of you throughout that period.

Meanwhile, stay safe in these uncertain times, and on behalf of the team, thanks for being part of our journey.

# Jands Announces Rebrand

“The Jands brand is more than just our logo. Our brand is our reputation. Our reputation is formed by people’s experience of the way we do business and the way we communicate.”

Jands Pty Ltd has announced a major change to its brand for the first time since 1990.

Jands is a proudly Australian owned company that has been providing professional audio, lighting and staging solutions since 1970.

Jands distributes some of the world’s most recognised brands of Audio, Lighting and Staging products, primarily for the integrated systems, retail, and professional entertainment industries and has coverage throughout Australia and New Zealand.

This brand launch continues the celebration of 50 years of continual ownership and caps a remarkable five decades of determined innovation and transformation.

The new brand design will gradually appear across Jands sites and properties from July, starting with websites, digital assets and advertising.

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# DARREN MCLANDERS JOINS LSC



Darren McLanders

## LSC Control Systems is proud to announce the recent appointment of Darren McLanders as NSW Sales Manager.

Darren started in the industry with a prominent Sydney production company, pushing cases and loading trucks.

His long career in lighting now spans 20+ years, ranging across entertainment production, architectural projects, and theatre installations, engaging him in both technical and commercial aspects of the business.

Darren comes to LSC in exciting times for the business. Whilst the last 18 months have been challenging for many market segments,

LSC is in a strong position and eager to look ahead, focus on the positives and provide the highest level of customer service. Darren's appointment further reinforces this as he provides fresh eyes to the market, with a focus on solution-selling and customer satisfaction.

Darren commented, "I'm really excited to be joining LSC. It has been a difficult time for many in the industry and I am really looking forward to reconnecting with friends and colleagues to see how we can help."

"It is doubly exciting to work for an Australian owned and operated manufacturer. If the last 12 months has taught us anything, it is that supply chains are very fragile and often Australia is at the end of those chains. An agile, local company like LSC and in turn, our customers can weather these uncertainties far better than many others who will be waiting for their next shipment to arrive. Local supply, support and knowledge."

Gary Pritchard, Founder and Managing Director of LSC said, "I am excited to have Darren join our team at this time of renewed growth for the company. Darren's broad range of experience will complement us perfectly and give us better coverage in the very important NSW market."

# QSC Consolidates Distribution in Australia

## TAG becomes exclusive regional distributor, adding QSC cinema solutions to their offerings

QSC has announced TAG is now the exclusive distributor of its entire portfolio throughout Australia, including its systems, live sound and now cinema solutions.

"As the modern cinema entertainment complex is expanding beyond the traditional auditorium into adjacent areas for dining, bowling, gaming and more, it makes perfect sense to empower a single distributor like TAG to serve the entire complex with a unified QSC solution," says Andy Pearce, Senior Director of Sales, Asia Pacific,

QSC. "As one of our longest-standing partners, TAG is well equipped to fuse their deep technology knowledge of the Q-SYS Platform with this ever-expanding opportunity for cinema customers."

"We now offer our customers full access to the QSC portfolio, giving them the opportunity to explore cinema-quality solutions in multi-purpose auditoria, performance centres and other presentation spaces," says Giles Brading TAG's CQO, head of the QSC business unit at TAG. "We

are thrilled to continue our solid partnership with QSC and proliferate their cinema solutions throughout the Australian market."

TAG has represented QSC in Australia for more than 25 years and has a head office and service centre in Stanmore (NSW), sales office and training facility in Collingwood (VIC) and warehouse at Kings Park (NSW).

**QSC**

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Sound Technician Lance Krive operating a new Quantum 338



MCEC



## MCEC Leaps Ahead with Quantum 338

**As one of Melbourne's primary cultural institutions for over 25 years, the Melbourne Convention and Exhibition Centre has often been a first adopter of new technologies in the audio sector. With an extended history of investing in DiGiCo solutions for live audio, MCEC recently made the choice to add two new Quantum 338s to their digital mixing repertoire.**

Soundcorp – A Diversified Company (SADC) are a leading supplier and integrator of professional AV systems nationwide. As one of MCEC's approved suppliers, they were on hand to coordinate delivery of the consoles and provide local support.

"The Quantum 338 offers a fairly dramatic step up in connectivity and processing within the DiGiCo workflow, and so was the logical choice when MCEC enquired about the acquisition of new workhorse systems. As their team are already very familiar with the DiGiCo ecosystem, we were excited to provide them with the latest Quantum iteration, as the upgraded capabilities are really impressive," notes SADC's Scott Jamieson.

Hosting an immense number of conventions, events, and live music each year, MCEC

already owns an impressive fleet of DiGiCo consoles and equipment, with its iconic Plenary Theatre including permanently installed DiGiCo SD Rack and Optocore infrastructure.

"Currently MCEC has 3 x SD11i, 2 x SD9, 2 x SD8, 2 x SD10, 2 x Quantum 338, and an S21, as well as several SD-Racks, SD-Miniracks, and a D-Rack in one of our theatres. We also utilise DiGiCo Little Red Boxes for flexible routing arrangements in a number of spaces," explains Michael Pfundt, MCEC's Audio Specialist.

"We deliver hundreds of events every year and have a large technical staff so ease of use is really important to us. DiGiCo consoles provide a highly intuitive user interface, along with powerful processing and flexible routing capabilities meaning that it is easy for our

crew to deliver what is required by our clients. On top of this, the reliability of SD Racks and Optocore are important to us when we are doing back-to-back shows and there is limited time for troubleshooting."

When MCEC was looking to expand on their large format console offerings, the 338s were chosen following careful research and after demoing them at a local event. Michael Pfundt expands on the logic behind their choice; "Stand-out reasons for me were the processing redundancy, enhanced screen space, and nodal processing. The Mustard Processing and the Spice Rack are also pretty great, and we're crossing our fingers that more effects modules are added to the Spice Rack soon. Also, having spent some quality time with them, I'm impressed by how quiet they are. I think I've only heard the fans spin up twice and they were barely audible."

Michael goes on to explain how he feels the addition of the 338s will help improve upon what MCEC can offer its clients; "We're anticipating the 338s being a rider-friendly console for touring shows where a little more than what the SD10 can provide is needed. Outside of that, the nodal processing makes it a great monitors option, not to mention the possibilities it opens in the hybrid event space."

[groupotechnologies.com.au](http://groupotechnologies.com.au)



Malcolm Weldon

# D2N Technology Solutions expands, takes on SimplyLive

## Malcolm Weldon appointed Broadcast Support IP Engineer at D2N Technology Solutions

Furthering their continued and significant expansion and commitment to the Australian market, Malcolm Weldon, one of the industry's best-known and respected media, IP and comms specialists, has joined D2N Technology as broadcast support IP engineer.

Weldon is known in the industry for being a highly skilled audio and electronics engineer with over 40 years' experience in a broad range of broadcast production and operations settings. His expertise includes hands-on installation, operation, troubleshooting and maintenance of equipment related to live television, home theatres, studio productions, outdoor broadcasting events and corporate mobile command centres.

Most recently Weldon enjoyed considerable success with SKY Racing Australia where he was promoted from research and development manager to senior engineer and then chief engineer technology integration in a tenure spanning over 22 years.

D2N MD Jason Owen said, "Malcolm is a very valuable addition to the D2N team and he brings with him a wealth of experience to his new role. He will add great value to our customers by adding to our service capability which in turn will give clients a more timely and focused response. He will also keep ahead of the manufacturers' product development cycles so we can talk and inform our customers about product pipelines with more clarity and certainty. Malcolm also adds his significant knowledgebase to the pool of engineering resource at D2N enabling us to

innovate and deliver even more fit-for-purpose solutions."

Weldon's day-to-day role includes being the first, crucial port of call for support across all of the brands D2N represents including Simply Live, Sienna, TVU, Kiloview and AIDA amongst others and encompasses software, firmware and hardware support. He will also be liaising with manufacturers regarding future firmware versions, beta testing and sandboxing before D2N release new and upgraded solutions to market. Finally he will work closely with MD Jason Owen to enhance the company's overall product knowledge and undertake site surveys.

Malcolm Weldon can be contacted at D2N on (02) 9837 6748 or at [Malcolm.weldon@d2n.com.au](mailto:Malcolm.weldon@d2n.com.au)



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## SIMPLY LIVE ▶

### SimplyLive

D2N have also joined forces with SimplyLive, the makers of one of the world's most intuitive, flexible and scalable multi-camera production systems. The new partnership sees D2N become a value-added reseller and system integrator for SimplyLive in Australia.

SimplyLive's ideal customer is a medium-sized broadcaster or production company who are always looking for kit that will lift the quality of their production, keep their costs under control and give them broadcast quality.

D2N's MD Jason Owen explains, "At D2N we deal with all the major OB and production companies in Australia and the second tier operators, of which there are hundreds. With the SimplyLive solution there is also a huge opportunity for sporting federations to improve their adjudication process. They can do this, easily, by making multiple camera angles available in a very easy to use GUI, so operators can quickly review decisions either

in-play or post-match. In short, SimplyLive adds significant value but at a fraction of the cost of their competitors' solutions."

SimplyLive also offer what Owen describes as, "the big all-in-one production" which gives clients vision mixing, audio mixing, graphics and slo-mo replay all in a single or multi-user touch screen GUI.

He said, "Honestly there is nothing quite like SimplyLive in the market right now with all of those features, especially at that quality level and competitive price. There's more though as they also offer Ref-Box which is used by multiple sports for match adjudication and all of their systems scale from 4 channel up to 16 channel with HD and UHD. They can be run on-site, on your premises or in the cloud so they are super flexible too."

Jason Owen concludes, "Anyone can sell boxes. At D2N we have a real focus on taking the time to understand the customer's end goal and then coming up with a fit-for-purpose solution that can add value to their business. In our experience most customers want to deal with as few suppliers as possible. In Australia D2N is regarded as a key supplier that can provide solutions across a number of



Jason Owen

platforms, making it very easy to do business with us. As an example, we are already strong in intercom and two way radios, so it's easy for customers to buy both from us. It is the same deal for video, as with SimplyLive we can provide production and then with other brands we represent such as Kiloview, AIDA, TVU and Sienna, we can provide the other pieces of the puzzle to complete the whole workflow."

[www.d2n.com.au](http://www.d2n.com.au)

# LumenRadio Unites CRMX and W-DMX



**For over a decade LumenRadio has provided their wireless DMX technology CRMX (Cognitive Radio MultiPlex). With last year's acquisition of Wireless Solution, they now own both W-DMX and CRMX technology.**

With the focus on user experience and industry standardisation, LumenRadio now presents a unified technology platform creating a seamless experience for all users of Wireless DMX.

Since 2008, there have been two competing technologies on the market; W-DMX from Wireless Solution and CRMX from LumenRadio. This has led to an industry divided between the two major technologies, until now.

In 2020 LumenRadio acquired Wireless Solution and together the two brands supply Wireless DMX to almost the entire entertainment lighting industry. With their ownership of both major technologies in Wireless DMX, LumenRadio is now in a position where they are able to set a standard for the entire industry.

"Our strategy has been to create the best experience for the user, making it easier

for all users of Wireless DMX. With our acquisition we are now able to unify the entire industry in one platform and set a standard of Wireless DMX," says Niclas Norlen, CTO at LumenRadio and inventor of both W-DMX and CRMX.

The first step to unify the technologies was the release of BlackBox G6 from Wireless Solution, which included optional CRMX. This made it possible for W-DMX users to control CRMX equipment for the first time, bringing the technologies one step closer together. Now LumenRadio is releasing the next step to the market: a unified technology platform.

LumenRadio will provide all OEM customers with modules featuring combined W-DMX and CRMX technology. This means that all fixtures with Wireless DMX will listen to both W-DMX and CRMX at the same time, and automatically select the protocol used by the transmitter.

With this new solution it will be possible to use either protocol to control all Wireless DMX fixtures on the market, regardless if you are using W-DMX or CRMX. The user does not have to select modes of operation or configure fixtures, all will be automatically configured during linking.

"With this new technology platform we are able to unify the industry that has been divided for so long. There's no need for multiple transmitters or incompatible technologies. LumenRadio supplies a Wireless DMX solution that will work with all fixtures," says Josef Hederström, Sales Manager at LumenRadio.

Going forward, all OEM customers integrating Wireless DMX will get support for both CRMX and W-DMX, unifying the industry into one technology platform. The solution is implemented in a selection of LumenRadio's modules and is undergoing testing right now, and will soon be available for new fixtures to OEM customers under both brands, Wireless Solution and LumenRadio.

LumenRadio will continue to supply the entertainment lighting industry with Wireless DMX under both brands, and with one unified technology platform it is easier than ever for all users of Wireless DMX.

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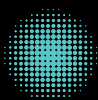
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# JANDS

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# Broadmeadows Town Hall Receives a Major Upgrade With Nexo Geo M6



**Originally constructed in 1964, Broadmeadows Town Hall has functioned as an integral backdrop to decades of personal milestones and civic events. From weddings, debutant balls and citizenship ceremonies, to live music, hot-rod shows and even a performance from AC/DC, Broadmeadows Town Hall has seen it all.**

A longstanding icon of mid-century design in the north of Melbourne, the town hall now stands as a beacon of the future, recently undergoing a \$25 million refurbishment—including an update of the internal architecture, contemporary finishes, and the addition of cutting-edge AV technology.

Overseeing the AV update was Light and Sound Solutions, a Melbourne-based audio-visual specialist with a focus on delivery of end-to-end solutions for production and installation. To help Broadmeadows Town Hall achieve their desired audio coverage of the building's auditorium, two separate NEXO GEO M6 line array systems were installed.

Mounted perpendicular to one another, the two GEO M6 systems, both comprised of two hangs each, offer an exceptional amount of flexibility within the space. The separated directional setups allow for accommodation of multiple seating arrangements and varied stage and audience structures in line with the area's scalable dancefloor and staging options. When combined with additional NEXO ID24 loudspeakers for fill, the auditorium becomes a dynamic entertainment space capable of a plethora of professional audio applications, including live music, speech reinforcement, DJ and playback, and more.

The GEO M6 is a compact line array series



featuring an outstanding size to power ratio. French manufacturer NEXO has become synonymous with unrivalled sonic reproduction, and despite the system's minimal physical measurements, the GEO M6 is no exception. Weighing in at a slim 9.7kg per cabinet, each M6 module is able to deliver pristine, full-range sound at an impressive 127dB. The visual impact of the series is subtle, thanks to its compact structure and elegant internal rigging system.

Integrating with the auditorium's striking monochromatic look, Light and Sound Solutions chose both a black and white M6 system, to tastefully match the white structural wall and the black internal dividing wall with matching modules. The GEO M6 series includes both a full range module (M620) and a low and mid-frequency partner module (M6B) for applications requiring more powerful reinforcement, such as live music. The black system is comprised of four M620 and one M6B per side, and the white system is comprised of four M620 and two M6B per side.

Daniel Thomas, Senior Project Manager at Light and Sound Solutions Integration, outlines the depth of their involvement in the recent upgrade: "Light and Sound Solutions is very proud to say that the Broadmeadows

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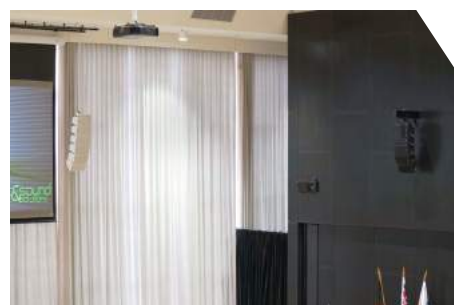
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Town Hall is one of our flagship projects. The design and product selection meets the aesthetic requirements set out by the architect, whilst also maintaining the sonic quality that the client expects. It is always very difficult to manage the requirement of speaker cabinets needing to be installed into a unique architectural space such as this, but thanks to a fastidious approach by our team, we have been able to achieve fantastic results. In particular, the combination of two white arrays and two black arrays in the same room presented some technical challenges, but the end result looks and sounds fantastic.”

Accompanying the primary line arrays are matching black and white ID24 loudspeaker variations. The ID24 is NEXO’s compact, high-powered loudspeaker system aimed at immersive sound and installation solutions. Part of the newly ratified ‘Inspace Definition’ series, the ID24 was chosen for its rotatable horn system, providing easy tuning of HF coverage, and the dedicated features present in its installation version (ID24-I) such as its captive cable connectivity and cloth grille.

Daniel Thomas reflects on the work undertaken to bring the venue’s new capabilities to fruition: “The upgrade required an attentive approach, as this project is a refurbishment, not a new build, and the nature of these classic buildings can present a variety of challenges from an audio, video and lighting perspective. The original building did not have suitable cable pathways, rigging or mounting points for the PA, lights, projectors or screens. Our design and installation team were responsible for all the custom work required to build this infrastructure and achieve the installation set out in the Architect’s Specifications.”

In addition to their integration work in the auditorium, Light and Sound Solutions also contributed to an upgrade of the Broadmeadows Town Hall Gallery space along with additional areas of the town hall. The Gallery is one of Hume City Council’s dedicated visual arts hubs, showcasing both local and international talent, often including both visual and audio requirements. High-fidelity ceiling monitors from Quest Engineering were chosen to provide even

sonic coverage across the length of the gallery, neatly integrated into the ceiling. Quest’s MXC601 is a ceiling-mount version of their award-winning MX series of installation loudspeakers, providing installers with compact building blocks of seamless full range audio. The MX series was used amongst over a hundred Quest loudspeakers installed by Light and Sound Solutions throughout additional areas of the building.

Recently winning a Victorian Architecture Medal, as well as the John George Knight Award for heritage architecture, Broadmeadows Town Hall has set its sights on serving a new generation of modern-day community needs. In a sign of the times, the town hall is now a hybrid of many functions, not exclusively civic, cultural or commercial, but a combination of all three. With its new cutting-edge AV upgrades, Light and Sound Solutions have ensured that the building’s audio technology will be able to keep up with the modern demands of such a space for years to come.

[groupotechnologies.com.au](http://groupotechnologies.com.au)

# MANPAC CALLS ON PLIANT TECHNOLOGIES' MICROCOM XR



WA's Mandurah Performing Arts Centre, also known as ManPAC, is a national leader in the curation and presentation of quality arts and cultural experiences that appeal to local artists and the community as a whole.

Head of Staging Ciaran McCormack relies on Pliant Technologies MicroCom XR digital wireless intercom system to provide production staff with a dependable communication solution to put on ManPAC's high-quality events.

"As head of staging, it's my responsibility to make sure everything is organised for our

## H Series Flagship Video Splicing Processor

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✉ [marketing@novastar.tech](mailto:marketing@novastar.tech)

- Multi layers
- Modular and plug-in design
- 52 Million Extra-large loading capacity
- 4K Real 4K
- High image quality
- All-in-One

Model	H5	H9	H9 Enhanced
Chassis	5U	9U	9U
Max, Input Cards	10	15	15
Max, Input Channels	40	60	60
Max, Output Cards	3	5	10
Max, Loading Capacity	31,200,000 pixels	52,000,000 pixels	52,000,000 pixels
Max, Screens	12	20	20





Clint Gerard, Dylan Conroy and Ciaron McCormack

“It seamlessly clips on to staff members’ clothing without being bulky or getting in the way while they move around the theatre.”



clients so that their production runs as smoothly as possible, both on and off the stage,” says McCormack. “Pliant’s MicroCom XR, paired with the brand’s SmartBoom headsets, allows me to provide the crew with the tools they need for clear communication between the front of house and backstage areas.”

At ManPAC, the wireless users of its eight MicroCom XR packs include the audio and lighting operators, stage manager, flies, mechanist, follow spot operator, front of house manager, and bar manager. MicroCom XR helps to ensure that all aspects of a production are executed as planned, with a coverage zone that reaches from backstage to front of house and beyond.

For McCormack, there was a variety of features that made it clear that MicroCom XR was the perfect choice for ManPAC. “The lightweight, compact design of the MicroCom XR beltpacks immediately stood out to me, as it seamlessly clips on to staff members’ clothing without being bulky or getting in the way while they move around the theatre,” he says. “Plus, it’s super easy to use and the price was fantastic compared to other products.”

In addition to the benefits of the MicroCom XR beltpacks, McCormack finds the flip-up microphone muting option on the SmartBoom headsets to be a huge benefit to their production workflow. “There’s a lot to

like about MicroCom XR, but the talk/mute function built into the SmartBoom headset was a selling point for us,” he adds. “With their exceptional audio quality, the headsets pair perfectly with the caliber of the intercom. It’s so easy to just flip up the boom arm when you want to mute yourself, and then flip it back down when you’re ready to talk. It helps us to be even more efficient in our flow of communication. Thanks to Pliant’s MicroCom, we can continue to put on the exceptional performance quality that the Mandurah community knows us for.”

[www.plianttechnologies.com](http://www.plianttechnologies.com)  
[www.nas.solutions](http://www.nas.solutions)

# EAW Evolution

## NTX SERIES

Building on the Radius line of loudspeakers, NTX Series aims to deliver a high performance solution while cutting down long set up times. NTX Series couples unique and intelligent features with EAW's signature acoustical design to deliver solutions for rental firms, production companies, and system integrators. The NTX articulated array features OptiLogic, providing automatic array self-detection and instant optimization including air loss compensation and more.



### NTX210L Powered 10" Line Array

The NTX210L offers large format performance in a compact and efficient system, helping designers satisfy demanding clients. Each array module wirelessly communicates with modules above and below. This greatly reduces setup, tuning time, and opportunities for errors while maximizing the array's performance.

NTX products and accessories are designed to support medium to large outdoor festivals,

corporate events, houses of worship, performing arts centers, and theaters.

- Self configuration and optimization
- Dante loop through
- High output per line-length
- Isophasic waveguide
- Configurable without a computer
- Clean professional look
- EAW Resolution 2 integration



Subsystem	Transducer	Loading
LF	2x10" cone, 2.5" VC	Vented
HF	1x1.4" exit, 3" VC compression drivers	Isophasic Wave Guide

### Core Technologies



#### Beamwidth Matched Crossovers

Introduced over a decade ago for our MK series loudspeakers, EAW Engineers use carefully-designed HF horns and crossovers to eliminate polar irregularities through the crossover point.



#### Focusing™

Use of advanced digital signal processing to perfect the impulse response of a loudspeaker in the time domain. Eliminating horn "honk" and splashiness, this makes the loudspeaker sound like a studio monitor instead of a "PA" speaker.



#### DynO™

Dynamic Optimization actively tracks input spectrum and power delivery, continually wicking maximizing output and fidelity at any drive level.



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Tuned spacing of LF components to extend pattern control without the need for enormous horns.



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Symmetrical arrangement of acoustic sources along a common axis for utmost consistency throughout the coverage pattern.



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To book your exclusive NTX Series Demo contact 03 9264 8000 or sales@pavt.com.au





Matilda

# Theatre Safe Australia Continues Scenery Workshop Legacy at Adelaide Festival Centre

**Theatre Safe Australia (TSA) is excited to announce the addition of an advanced scenery workshop to our operation from 1 August 2021.**

Formerly operating under the ownership of the Adelaide Festival Centre Trust, the workshop in South Australia has been the country's leading commercial set builder, handling 65% of all theatrical scenery work in Australia. Striving always to build out complementary arms of our business, TSA is headquartered in the Gold Coast and is one of Australia's major suppliers of entertainment and theatre technology.

From August 1, Theatre Safe Australia will commence to operate a scenery workshop in the former Adelaide Festival Centre premises at Regency Park, South Australia.

Theatre Safe Australia will continue the legacy of Adelaide Festival Centre's Scenery Workshop, employing many former Adelaide Festival Centre staff. The workshop will continue to provide high-quality scenic builds to clients, adding the support of a dynamic young company focused on continued innovation in the industry. This new chapter for Theatre Safe Australia creates an operational team whose commitment to providing top tier service and high-quality solutions is matched with decades of experience, and now, the ability to take a production fully from concept to reality by acquiring the facilities previously owned and operated by Adelaide Festival Centre Scenery Workshop.

The new TSA Scenery Workshop will complement the venue services, production support and product solutions that Theatre Safe Australia already provides within the Australian and worldwide market.

Director of Theatre Safe Australia, Stuart Johnston says, "We are very excited to be bringing such a talented and experienced workshop on board and look forward to what the future will bring. TSA will continue to provide the high-quality services clients expect from both companies and use this expansion to continue to innovate with the technology available in the manufacturing and set construction space."

Theatre Safe Australia (TSA) is an Australian based company that exists to create solutions for the entertainment industry. TSA is motivated by supplying, creating and designing theatrical automation and engineering solutions for our clients and providing service that exceeds expectation. We craft solutions to fit every aspect of the

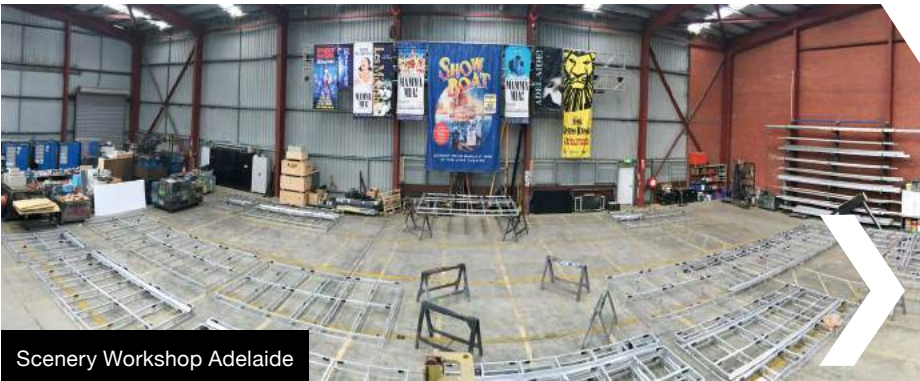


Mamma Mia!

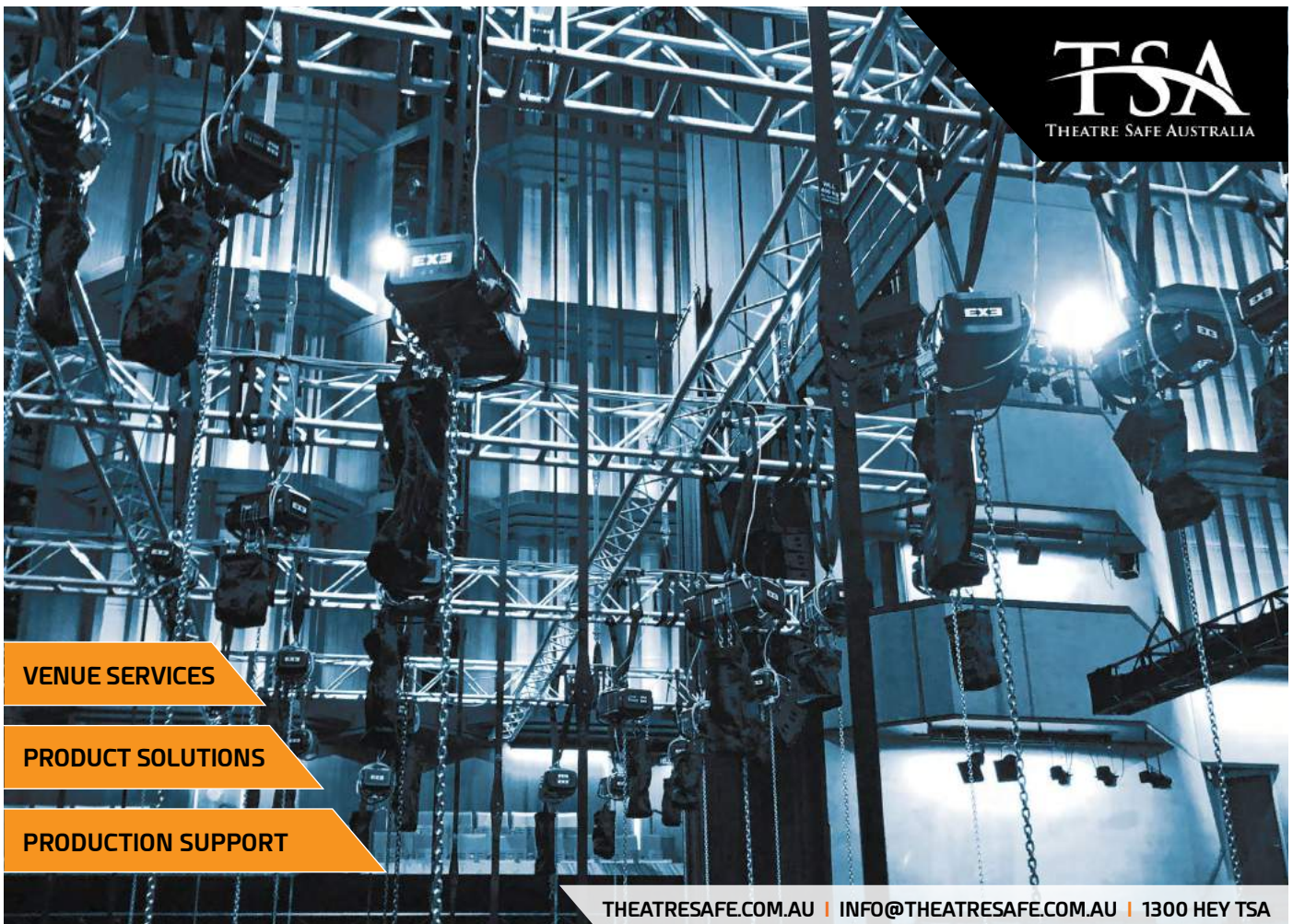
diverse industry in which we operate, from large scale productions and corporate events, to local and regional based companies, theatres and schools. TSA's goal is to create a tangible difference to the quality and safety of production and events being created and delivered in Australia.

Since 1979 Adelaide Festival Centre has provided automation and scenery builds for productions including Phantom of the Opera, Matilda, Billy Elliot, Singing in the Rain, Hairspray, Cats, and Moulin Rouge! as well as countless others. This prolific production history has been achievable through a workforce and a workshop that pride themselves on the quality of their build, an understanding of the changing dynamics of the entertainment and theatre industry and a willingness to always go above and beyond to fulfill producers and clients' requirements.

For more information on TSA, please visit [www.theatresafeaustralia.com.au](http://www.theatresafeaustralia.com.au)



Scenery Workshop Adelaide



**TSA**  
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**PRODUCT SOLUTIONS**

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## Absen JD Series

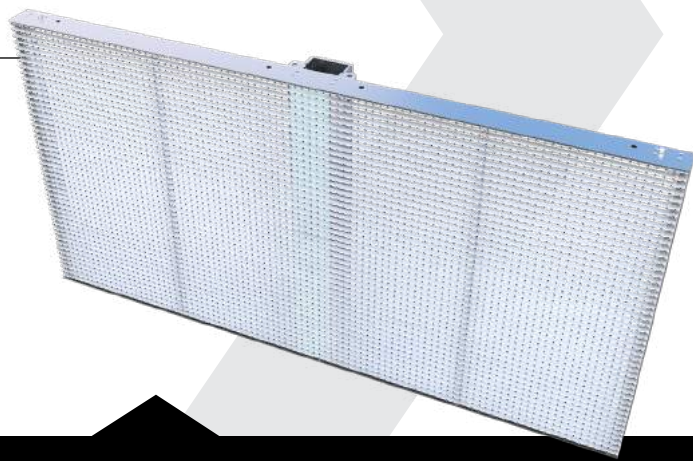
Absen has launched the Jade Dragon (JD) Series. A transparent LED display solution, created to be used in windows or to divide spaces, the JD Series boasts a lightweight 6.5kg design, as well as 10mm thickness and up to 86% transparency. Featuring brightness of up to 7,000nits and a high refresh rate of 3,840Hz/20,000Hz, advertisers can be assured that content on the JD Series will be eye-catching and bold, and uncompromised by the transparency of the screen. Retailers, meanwhile, will gain the added benefit of windows that can not only provide ample light and visibility for in-store products, but also advertise to and attract customers.

**Australia and New Zealand: Audio Visual Distributors**  
[www.avdistributors.com.au](http://www.avdistributors.com.au) or +61 (0) 7 5561 7530

## Chauvet Professional Rogue Outcast 1 BeamWash

The Rogue Outcast 1 BeamWash is a lightweight, IP65 rated, LED Beam and Wash fixture enhanced with a pixel-mappable LED ring around its face. A unique lens design developed for tight beam effects allows for a wide zoom range of 3.9° to 55.3°. Seven 45W RGBW LEDs combine excellent colour mixing with a punchy output featuring 16-bit dimming and several dimming modes for advanced control. The outer ring comprises of 12 pixel-mappable RGB LED zones underneath a smoked stealth filter.

**Australia: Showtools** [www.showtools.com.au](http://www.showtools.com.au) or (02) 9824 2382  
**New Zealand: M.D.R Sound & Lighting** [www.mdrlighting.co.nz](http://www.mdrlighting.co.nz)  
or (06) 355 5073



# NEW



## d&b audiotechnik D40

The D40 is a four-channel Class D amplifier featuring reduced size and weight, advanced voltage management, and increased system performance while significantly reducing power consumption for improved environmental friendliness. Its maximum output power is 4x 2400/2000 W into 4/8 Ω. The amplifier's user interface consists of a 4.3-inch (480 x 272 pix.) colour touchscreen and a digital rotary encoder, providing comprehensive information of the device configuration and enhanced status monitoring.

**Australia: NAS** [nas.solutions](http://nas.solutions) or (03) 8756 2600  
**New Zealand: NAS** [nz.nas.solutions](http://nz.nas.solutions) or (09) 414 4220



## Cameo H2

The Cameo H2 is a DMX-controllable house light with options for full colour, warm white, and daylight LEDs in either a black or white enclosure. It features 180 W daylight LED with 17,000 lm total output, 5,600 K colour temperature and CRI > 90 for optimal reproduction, and an adjustable beam angle from 19° to 85° using exchangeable lenses. Control is via DMX and W-DMX.

## Cameo Flat Pro Series

Whenever confined space necessitates the need for particularly flat spotlights, Cameo offers you the optimal solution with the FLAT PRO series. The compact PAR cans with RGBWA colour mixing and high refresh rate are available in three versions with 7, 12 or 18 extremely bright 10 watt LEDs. They operate silently due to convection cooling and are also available as IP65-rated outdoor fixtures.

**Australia and New Zealand:**  
**Direct Imports** [directimports.co.nz](http://directimports.co.nz)  
or (+64) 21 352 598



## MagicQ MQ250M Stadium Console

MagicQ MQ250M Stadium combines high show control capacity with portability, for a complete on-the-go console solution. MQ250M has the ability to control up to 128 universes without any additional processing equipment with the ready-to-go MagicQ software you are already familiar with. 10 backlit and motorised faders and 10 backlit playback encoders with executors give you a lot of programming real estate in the MQ250M's small frame.

**Australia and New Zealand: ULA Group** [www.ulagroup.com](http://www.ulagroup.com)  
or AU 1300 852 476 / NZ +64 9 218 6532



### Blustream AMF41W

Blustream is now shipping the new AMF41W 4K Advanced Wireless Presentation Switch. This all-in-one switch simplifies content sharing in meeting spaces and is ideal for boardrooms, conference rooms, huddle rooms, and classrooms. The AMF41W is the ultimate BYOD solution for wireless presentation, including AirPlay and Miracast from computers and mobile devices. It features an onboard WiFi hotspot that eliminates the complexity of setting up guest wireless networks and boasts a multi-viewing capability with configurable screen layouts, support for seven concurrent video signals, and more.

**Australia:** Jands [www.jands.com.au](http://www.jands.com.au) or 02 9582 0909  
**New Zealand:** Sound Group [soundgroup.co.nz](http://soundgroup.co.nz) or 09 415 6680

# GEAR

### Kiloview N6 HDMI/NDI

The Kiloview N6 HDMI/NDI converter is a bi-directional converter that supports HDMI input (encoder) to both NDI and NDI|HX with loop through for view on monitor, or HDMI video output (decoder) from NDI and NDI|HX. This is the first NDI converter based on NDI SDK 5.0 which can handle both NDI and NDI|HX, encoding and decoding. The N6 HDMI/NDI includes PoE, built-in big tally light, PTZ control, 3.5mm audio line in/out, multi-channel audio, and intercom functions.

**Australia and New Zealand:**  
**D2N Technology Solutions**  
[www.d2n.com.au](http://www.d2n.com.au) or +61 (0) 2 9837 6748  
**Adimex** [www.adimex.com.au](http://www.adimex.com.au) or 02 9431 6060

### AIDA HD-X3L-IP67

Introducing the camera where no other AIDA products have gone before; the outdoors. Operate in almost any environment with IP67 rated protection, covering against dust, moisture, and even water submersion up to 1m for 30 minutes. These are ideal specs for all-weather sporting events, professional biology research, and OB vehicles looking for that next scoop.



**Australia and New Zealand: D2N Technology Solutions**  
[www.d2n.com.au](http://www.d2n.com.au) or +61 (0) 2 9837 6748



## Are you concerned about your mate's mental health?

**FACT: Most Australian tech crew and roadies have attempted or considered suicide<sup>1</sup>!**

**Support those around you and register for free mental health training**



<sup>1</sup>Passion, Pride, Pitfalls Dec 2014

[www.entertainmentassist.org.au](http://www.entertainmentassist.org.au)

Supporting the mental health of Australian entertainment industry workers

## Neumann KH 750 AES67

The compact KH 750 AES67 is the ideal subwoofer for all areas in which audio over IP in existing AES67 infrastructure is to be routed all the way to the loudspeakers in a redundant and lossless manner. Its AES67 interface allows it to address not only the subwoofer but the entire stereo system, including the speakers connected to the KH 750 AES67. Its dual AES67 audio network connections are fully compliant with broadcast standards such as ST 2110 and ST 2022-7 redundancy. At the same time, the KH 750 AES67 is also compatible with Dante generated AES67 network streams.

**Australia:** Sennheiser en-au.sennheiser.com or 1800 648 628  
**New Zealand:** Sennheiser en-nz.sennheiser.com or (09) 580 0489



## Event Lighting PS200LEFC

The PS200LEFC is a full-colour profile spot light engine, featuring a 200W RGBL (Red, Green, Blue and Lime) LED. The unit has an aluminium housing, 3-pin DMX, PowerCON in/out, 16-bit dimming and a user-friendly interface. Lens options to suit the PS200LEFC are ordered separately. Compatible models are the PSLII19 (19°), PSLII26 (26°) and PSLII36 (36°).

**Australia and New Zealand:** Eventec  
[www.eventec.com.au](http://www.eventec.com.au) or +61 (0) 2 9897 3077

## Powersoft T Series

The new T902 and T904 have been introduced to extend the applications of the T Series even further, allowing it to cover the requirements for any system deployment, including larger-scale live sound applications. The T902 is a 2-channel amplifier specified to deliver 4000W at 2 Ohms, 3200W at 4 Ohms, or 1800W at 8 Ohms, and its high rail voltage and peak current on the outputs make it ideal for driving large 4-Ohm subwoofers (like dual 18") or 2- and 3-way line sources. The other addition to the T Series family is the 4-channel T904, which can deliver 1800W at 2 Ohms, 2000W at 4 Ohms, or 1600W at 8 Ohms. This new amplifier platform is designed to power bi-amped systems like stage monitors, 2-way point source speakers, and 2-way line sources, as well as smaller subwoofers.

**Australia and New Zealand:** PAVT [www.pavt.com.au](http://www.pavt.com.au)  
or +61 (0) 3 9264 8000 / +64 (0) 21 410 050



## Motorola MOTOTRBO Ion

Motorola MOTOTRBO Ion brings together renowned PTT performance, an open app ecosystem on the Android platform, and access to the Motorola Solutions technology ecosystem, including video security and analytics, and best-in-class network security. With Ion, teams stay connected across networks and devices. Business-critical data and workflows are unified and simplified. And the capabilities your workforce needs to be at their best are always on.

**Australia and New Zealand:**  
**ACE Communication Distributors**  
[www.acecomms.com.au](http://www.acecomms.com.au)  
or +61 (0)7 3821 4111



## 1.5 grandMA3 SOFTWARE RELEASE 3

### grandMA3 software release 1.5

MA Lighting has now released grandMA3 software version 1.5. This release brings many new features and functionalities, workflow improvements in different areas of programming and additional tools especially for the first steps into the world of grandMA3 lighting control systems. Top features include - absolute and relative values completely separated, USB MIDI support for the onPC software, Agenda, and free-designable DMX curves.

**Australia:** Show Technology Australia  
[www.showtech.com.au](http://www.showtech.com.au) (02) 9748 1122  
**New Zealand:** Show Technology New Zealand  
[www.showtech.nz](http://www.showtech.nz) (09) 869 3293

**Epson ELPEC01**

Exclusively designed to fit Epson EB-PU2000/1000 series projectors, the ELPEC01 external camera is now available to pair. Attach an ELPEC01 external camera directly to the EB-PU series or ELPLX01S or ELPLX02S UST lens to enable powerful installation capabilities. Powered by Epson Professional Tool software and Epson Projector Management software, ELPEC01 automates manual installation processes and enables remote camera access.



**Australia:** Epson [www.epson.com.au](http://www.epson.com.au) or (02) 8899 3666  
**New Zealand:** Epson [www.epson.co.nz](http://www.epson.co.nz) or (09) 366 6855



**Dynalink USB Conference Microphone D0985**

This USB conferencing microphone is a portable device allowing you to take your conference room and meetings anywhere. It provides clear and crisp audio for group conferencing and one-on-one communications. It can also be used to take audio-only phone calls and allow groups of meeting participants to be included in the conversation. A convenient centrally mounted mute button provides a quick way to switch the microphone on or off without touching the connected device.

**Australia and New Zealand: Altronics**  
[www.altronics.com.au](http://www.altronics.com.au) or +61 (0) 8 9428 2122

# GEAR



**NovaStar VX1000**

The VX1000 is NovaStar's new all-in-one controller that integrates video processing and video control into one box. The VX1000 can be used in applications such as medium and high-end rental, stage control systems and fine-pitch applications. 10 Ethernet ports of output provide 6.5 million pixels of loading capacity. A single unit can output a maximum width of 10,240 pixels, with a maximum height of 8,192 pixels. The VX1000 features 4K x 1K@60Hz high resolution input, 4K x 1K point-to-point display, and 3 x 4K layers, with free scaling for each layer.

**Australia and New Zealand: ULA Group** [www.ulagroup.com](http://www.ulagroup.com) or AU 1300 852 476 / NZ +64 9 218 6532



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[tradeline.papeople.com.au](http://tradeline.papeople.com.au)

# NEW GEAR



## Clear-Com Arcadia Central Station

Arcadia Central Station is a next-generation scalable IP platform which integrates all wired and wireless partyline systems, including the FreeSpeak family of digital wireless solutions and HelixNet Digital Partyline. The system can license up to 96 IP ports in a single RU device, with further licensing add-ons anticipated in the future, making Arcadia the intercom centrepiece for a vast range of applications best served by partyline workflows.

## ClearCom FreeSpeak Edge Base Station

The FreeSpeak Edge Base Station supports the full range of FreeSpeak digital wireless solutions. This standalone base station can support the FreeSpeak Edge 5 GHz, FreeSpeak II 1.9 GHz (including both E1 and IP transceivers), FreeSpeak II 2.4 GHz, as well as third-party Dante devices. Configuration is easy with a new CCM browser-based configuration manager, two full-colour high-resolution touch screen displays, and advanced menu options directly from the front panel.

## ClearCom CC-28

The CC-28 features a 4-pin XLR connector and is a lightweight, single-ear headset with an over-the-head design and a flexible gooseneck microphone. The headset's dynamic microphone can be muted by moving the microphone boom; rotating it up will mute the microphone while rotating down in front of the mouth will un-mute the microphone. The CC-28 is the functional replacement of the CC-26k lightweight headset.

**Australia: Jands**  
**www.jands.com.au or (02) 9582 0909**  
**New Zealand: Oceania**  
**oceania productions.co.nz**  
**or 09 846 5533**



## TASCAM VS-R264 and VS-R265 V1.1 Firmware

TASCAM has released V1.1 firmware for the VS-R264 and VS-R265 Video Streamer/Recorders, which increases the number of concurrent RTMP streams from 1 to 3. This allows a VS-R to stream simultaneously to up to 3 online video platforms that use the RTMP or RTMPS protocol, which include YouTube, Facebook, Twitch, Wowza, Vimeo, Boxcast, DaCast and many others. RTMP can also be used to stream to online education platforms such as Planet eStream and Panopto. With multiple RTMP streams available, the VS-R can now send one stream to the main server URL and send a second stream to a different URL for a backup server, something that many online platforms provide for extra resilience.

**Australia: CMI Audio** **www.cmi.com.au or (03) 9315 2244**  
**New Zealand: Direct Imports** **directimports.co.nz or (06) 873 0129**



## Robe CUETE

The latest moving head spotlight fixture from Robe is a compact, high-quality solution for small-to-medium productions, performance spaces or installations. Creating dynamic effects and projections is quick and simple with the CUETE, which offers a CMY colour mixing system and an impressive 4,200-lumen output of sharp, crystal clear white light. CUETE utilises Robe's patented TE 120W White LED Engine which is at the core of the manufacturer's TRANSFERABLE ENGINE technology. The CUETE's 16-degree fixed beam lens has remote control focus and can be swapped to the optional 24-degree lenses for shorter throw and low ceiling scenarios.

**Australia: Jands**  
**www.jands.com.au or (02) 9582 0909**  
**New Zealand: Jands NZ** **jands.nz or 021 674 601**



## Williams AV Convey Video

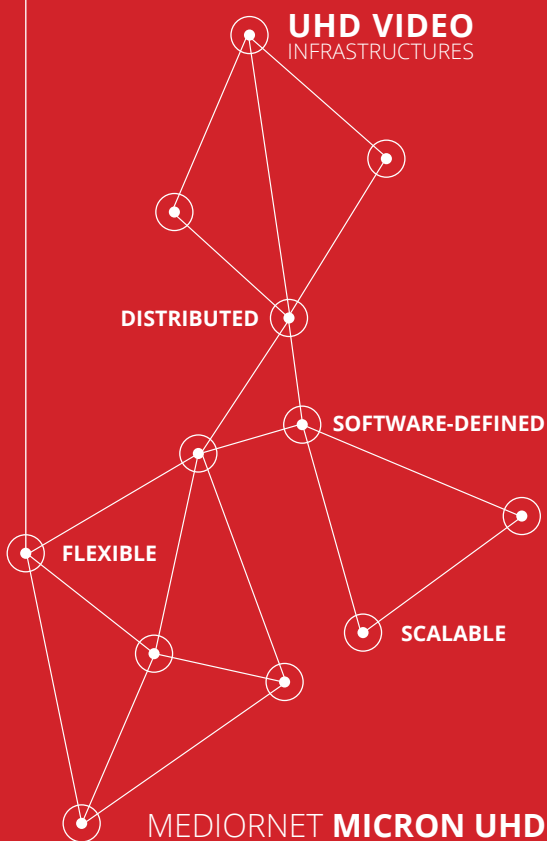
Convey Video is the world's first real-time language translation, open captioning, and archiving system for the pro-AV industry. Powered by Google's artificial intelligence platform, Convey Video eliminates the barriers of language with real-time translation and can transcribe up to 27 languages and more than 70 dialects with up to 94% accuracy. In addition to real-time continuous translation, Convey Video provides accurate speech-to-text transcription and archiving of all events.

**Australia: Amber Technology**  
**www.ambertech.com.au or 1800 251 367**  
**New Zealand: Amber Technology**  
**www.amber.co.nz or +64 (0)9 443 0753**



# SMALL FORM FACTOR

# BIG IMPACT



MicroN UHD propels your MediorNet TDM infrastructure by adding UHD capabilities at a remarkable form factor. Building on Riedel's trusted distributed and software-defined solutions, this new node adds more bandwidth, more I/O, higher resolutions, and more processing power and still only requires a single rack unit. MicroN UHD fully integrates into distributed routing architectures and connects to existing MediorNet TDM devices, allowing for enhanced workflow flexibility.

THE NEXT GENERATION VIDEO SIGNAL DISTRIBUTION AND PROCESSING DEVICE

- 12G-SDI for native UHD (4k) workflows or hybrid UHD/3G/HD workflows.
- 48 SDI video ports signal capacity per RU incl. 16 direction switchable SDI video ports
- New 100G high-speed link format
- 400G backbone connectivity for signal distribution over meshed architectures
- reliable operation due to link redundancy





# AMY SHARK TOURS AUSTRALIA WITH CHAMELEON

**Multi ARIA award-winning singer-songwriter Amy Shark's Cry Forever national tour kicked off in June in Newcastle, one of the first arena tours since the beginning of the pandemic.**

The tour is the Gold Coast local's most ambitious live undertaking yet, performing in some of Australia's largest venues. Lighting designer Tim Beeston was asked to create a show that looked BIG, on a budget, with a very short lead-time to create something amazing.

"All of the design tricks had to be deployed and our suppliers delivered a high amount of value for a carefully balanced expenditure," Tim laughs. "What we did use, I feel we used pretty well. The show had no content-driven video element, which always makes an arena-size show more demanding to design."

Chameleon Touring Systems supplied the eclectic rig of Robe, Martin, GLP, Chauvet, and Portman lighting fixtures, with the design created around fifteen Robe BMFL WashBeams.

"They're the first truly multi-functional, bi-functional light that I have used," he said. "The animator, air effect gobos, and wide or narrow beam dispersion make them a great tool. With the budget in mind, instead of twenty spots and twenty washes, I engaged with fifteen BMFL WashBeams. Plus the 40,000 lumens they deliver means you can carry through into deeply saturated colours and not lose out in brightness."



“I also had thirty Robe MegaPointes that have beautiful prism effects. Again, as a hybrid, you can blow it out into a spot, add two gobos and a prism, and the intensity is all still there. Slightly saturate the colour and it all punches through, pull it back into a beam and you get a crisp, sharp beam with a wide-body coming off the larger front lens.”

Upstage is five Kinesys pods each holding four Chauvet Aw Nexus 7x7 that have been used in previous designs and were an important

element to carry through to this tour. During the show, they move to six different positions, with four songs featuring automation in the chorus builds. In Amy Shark’s hit song Everybody Rise, they do just that! Also on each pod were five Robe MegaPointes, three GLP JDC-1s, and four Sunstrips.

Mid-stage is the Amy Shark sign, central to the show, and constructed by Thomas Creative. It comprises a 24-volt RGBW LED neon on black ACM with a mill-finished

aluminium surround, fitted with diffusers to diffuse the light. The size had to suit all venues and be festival-friendly for the future.

Downstage is two flown chevron-shaped trusses with the one closest to the stage housing Sunstrip Actives and ten Robe MegaPointes for some dappling onstage and top fill. The other is also lined with Sunstrips and houses eight Robe BMFL Blades for all of the pickups done with framing, to avoid stage pollution.



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Eight Martin MAC Viper Profiles were used as edge-wrap for Amy on stage left and right, where they could give her a back-edge for all of the Instagram photos every show produces.

“On phone cameras, you need enough light to capture what they’re trying to shoot whilst not over-exposing her,” adds Tim. “It’s become an important part of lighting design nowadays, as every show is immediately posted on Instagram. It’s tricky to do well and still deliver a great entertainment lighting show.”

On the floor upstage are eight Robe BMFL Spots for a big, punchy upstage push. 22 Robe Spikies are located around the front fascias of the three risers, filling the gap between Amy and her band.

“It’s the first time I’ve deployed Spikies in an arena and I was concerned that they might not be bright enough,” commented Tim. “However they turned out to be the perfect fixture for when you do an audience hit, zooming right out to a nice soft source. They are a great little light.”

Successfully filling the void left by the lack of video were the moving pods and a line of 24 Martin Sceptron towers of varying heights, stretching across the stage behind the band. Each tower is topped by a Portman P3, and half of them also house a GLP JDC-1.

“In a very abstract way, it’s meant to be shark fins,” clarifies Tim. “Normally I’d top each tower with a duet or molefay, but with the Portman P3s, you can run them to full brightness pointing at the audience without hurting their eyeballs. It’s bright but soft at the same time.”

Tim describes the 44 Sunstrip Actives as bright yet gentle, and although they have been around for years, sometimes old things just work best! He adds that a strip of four uses 40 channels, and you can run some nice looking effects.

This was the first Amy Shark tour where control moved to MA Lighting grandMA2; a full-size console and three NPUs.

“I have been using an MA2 for the past six months whilst working on the movie Thor, so switching from the ChamSys wasn’t a problem,” said Tim. “It’s great to timecode on, and makes festival life easy as everyone has MA2s or MA3s. For the Sceptrons, I’m using Madrix with Madrix to the Martin P3 controller, pixel-mapped in DMX mode, resulting in 60 universes of DMX control for the Sceptron. I think the Volumetric Effects Generator in Madrix provides higher-quality lighting effects for something like Sceptron than having to create custom content for each song that would need to be sent via DVI out of VJ software. For me, it makes it more of a light than a video element.”

Four Robe BMFL Spots with two RoboSpot control systems were used for followspots.

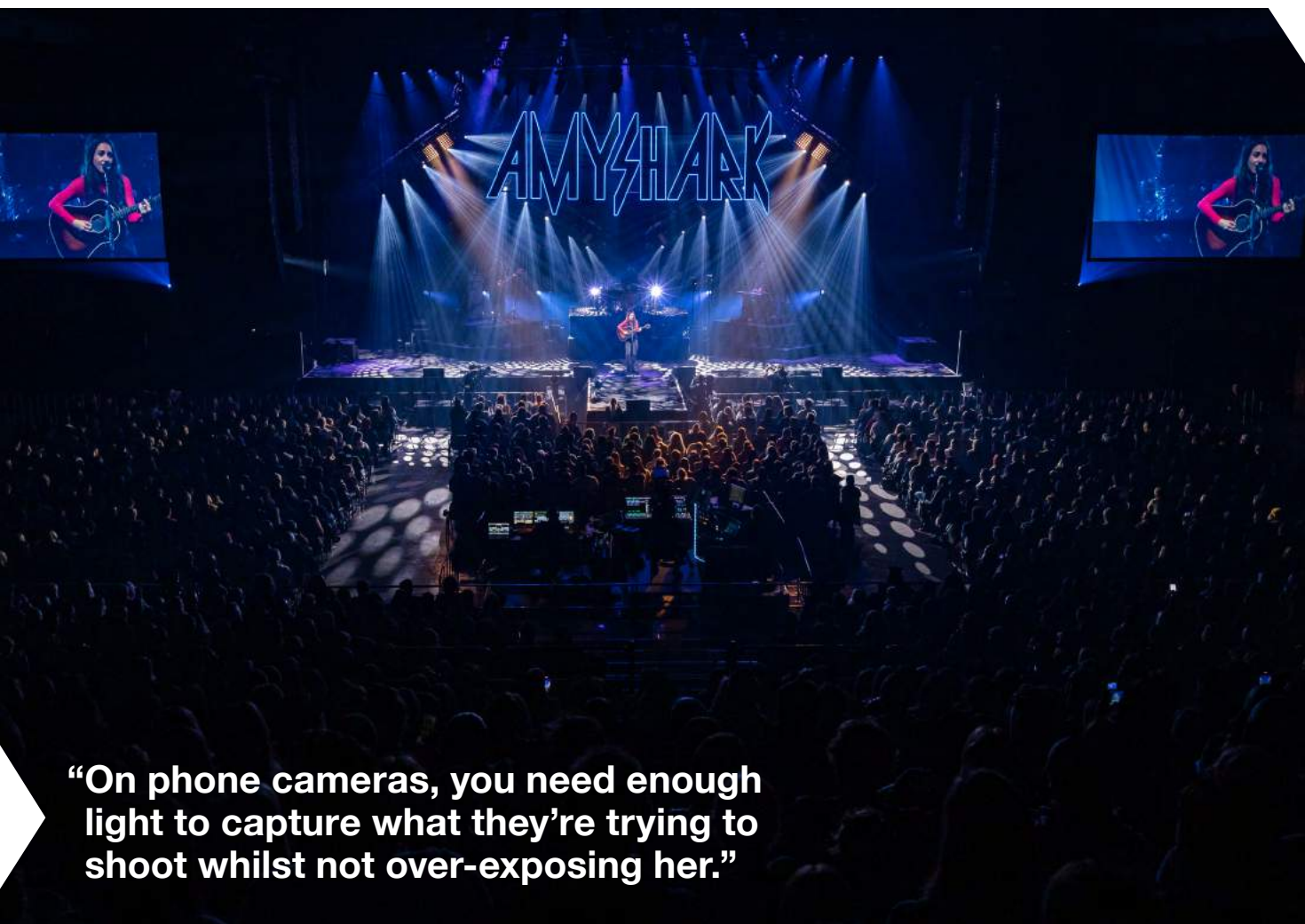
“The creative direction from the client stated that they don’t like the FOH spot look and to be honest, neither do I,” said Tim. “What you end up doing is flattening out your subject and losing all definition. With the RoboSpots, I was able to light Amy properly and I enjoyed using them. Lewis Gersbach from Chameleon did a great job with the tennis balls getting the stage position correct. Being able to plot two fixtures to one controller gave great flexibility.”

Effects were a couple of JEM ZR44 foggers and two MDG theOne, with Tim amazed at how quickly the venue could fill with fog.

Tim commented that the Chameleon crew comprising Lewis Gersbach, Levi Boes, Graham Walker, David Goldstein and Andrew ‘SOS’ Ritchie did an outstanding job, with a tricky build from a demanding designer.

“It’s easy to draw lots of lights on a piece of paper but you need skilled professionals to translate your vision into reality. I received great service with high-end delivery from Chameleon,” says the demanding designer.

[www.chameleon-touring.com.au](http://www.chameleon-touring.com.au)



**“On phone cameras, you need enough light to capture what they’re trying to shoot whilst not over-exposing her.”**



Photo Credit: Daniel Boud



Photo Credit: Daniel Boud



Photo Credit: Daniel Boud



Photo Credit: Daniel Boud

# PSYCHO ACOUSTICS

## The Immersive Sound Design of American Psycho by Jason Allen

The Australian production of the one-of-a-kind musical of Brett Easton Ellis' peak 1980s Wall Street satire, **American Psycho**, is fuelled by greed, narcissism, murder, and a thumping EDM soundtrack reimagined by musical director Andrew Worboys. Working hand-in-hand with Andrew, sound designer Nick Walker created a 24 channel immersive surround design that would have been impossible without a handy app called panLab 2...

The production has just finished up its short Australian tour, sadly cut short by COVID. **American Psycho** won nine Sydney Theatre Awards after its initial Hayes Theatre Co season, played The Opera House Playhouse, Canberra Theatre Centre, and was also scheduled at HOTA Gold Coast and Illawarra Performing Arts Centre, but missed out due to restrictions.

With Ben Gerrard in the lead role of Wall Street banker and serial killer Patrick Bateman, there are 11 cast members using 14 channels of radio mics. A DiGiCo SD8 sits at the heart of the PA, and the music, underscoring, and sound FX are all playback from a redundant QLab system, outputting to the main Left-Centre-Right in each venue, plus the 16 channel surround system toured

# THEATRE

with the production. Plotting to the surround is not just effects – individual musical elements in every song are mixed in surround.

## Take A Look At Me Now

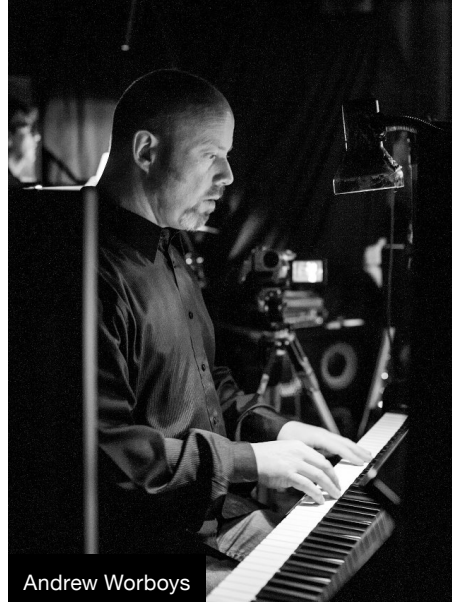
“The design for American Psycho is one of the biggest and most complex things I’ve done,” relates sound designer Nick Walker of Spectra Audio Solutions. “Relative to the size of the venues we’re performing in, the sound component is really large. It’s a full surround mix, all the time. Every song has been re-arranged in surround. The heart of the design is our MD Andrew Worboys’ rewriting of the parts as an EDM musical. In essence, it’s all new music; if you listen to the original cast recording, you wouldn’t recognise it.”

Through the re-arranging process, Nick was right there with Andrew, integrating the sound design deeply into the music. “There was a very blurred line between myself and the MD in the creation of the show,” Nick outlines.

“Andrew was out the front with me for the entirety of the teching of the show. I did a lot of the underscoring sound design, sound FX, and anything that wasn’t actually a track. There was a lot of to and fro.”

## Against All Odds

The original Hayes Theatre Co season was built with a much smaller surround system than the touring version, as Hayes only seats 110, and didn’t utilise the surround to the same extent. When the show was redesigned



Andrew Worboys



Nick Walker



Photo Credit: Anthony Lorenz



Photo Credit: Daniel Boud

with a larger surround system for touring, Nick had to re-programme the show, a task he would have considered impossible without Innovative Audio's panLab2.

panLab 2 is a spatial audio mixing solution that integrates directly with QLab, and runs on macOS. Beautifully simple in execution, it allows designers to plot their surround system onto the app, then draw and time audio pans and fades onto the map. It then sends all the relevant level and panning data in QLab via OSC, which saves it in cues. It is not needed to run the show.

### In The Air Tonight

"Re-programming hours for the touring version would have been in the hundreds without panLab 2," admits Nick. "panLab 2 has streamlined everything for me. Setting it up takes five minutes. You load up your auditorium plan, place the surround nodes where you've put the speakers, then you group them into zones. American Psycho uses a 'stage zone', with foldback doubling as rear surround, 'auditorium zone', and 'overheads zone'. Once you've done that, you've got your layout, which allows panLab 2 to calculate fade times. You connect panLab 2 to your QLab session with one button press. To build a cue in QLab, make a sequence with your mouse over the map in panLab 2 by drawing a line or multiple lines where you want the sound to go over time, then it automatically loads into QLab."

This simple workflow has allowed Nick to create effects that would have been otherwise impossible. "One cue has 70 or so fades in the space of 14 seconds. It took me two minutes to draw in. I wouldn't even have attempted it without panLab 2. My favourite design element in the show is in a song called 'Cards'. We emulate a business card flipping around the room, and it does a big winding circle. You feel like you're being swept into the wind of the card flying by you. It's a really nice musical effect, and one of one of the first things Andrew and I created."

### Invisible Touch


With the whole show relying on QLab playback, redundancy is a big feature of the system. Two Mac Minis running QLab are wired up though an Autograph XMADI1, which can switch MADI sources with a button press. It works in conjunction with an Autograph XUSB2 which can switch KVM, MIDI, and GPIOs at the press of a button. "Reliability was another reason to choose panLab 2 for plotting the show," observes Nick. "Once the show's plotted, panLab 2 can be shut down. You don't need it in show mode. QLab holds all the files and deals with all the panning and volumes. Not having a piece of third-party software running is good for stability."

The surround system on tour with the show comprises 16 EAW JF80 loudspeakers powered by Camco Vortex amps, all fed on individual aux busses from the DiGiCo SD8. "It's been a challenge to find spots to rig the surround that are appropriate to the size of the venue," says Nick. "Hanging them too low means that some people get blasted without the sound getting to the centre of the room. Height is our friend."


### In Too Deep


In both the novel and original production, iconic 1980s tracks feature heavily. Huey Lewis's 'Hip To Be Square' and Phil Collin's 'In The Air Tonight' are both integral to the show. "Hip To Be Square is the only track we didn't alter as it's such a critical part of the show," Nick elaborates. "In The Air Tonight is faithful to the original, because it's so iconic it has to be! Though we did change the instrumentation a little." Spoiler alert – in the show, 'In The Air Tonight' doesn't make it to the famous gated reverb drum fill, devastating audience expectations.

As you can imagine, American Psycho is no typical show. "There's really no musical like American Psycho," concludes Nick. "It's a shock to the system if you're not expecting it. Getting the show's EDM tracks to punch without overdoing it, or overshadowing the vocals was a big challenge, but fulfilling. The sound design has helped make the show what it is. People are coming out amazed at what they've heard, so I'm pretty happy."








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# It's Too Late... We're Visual Addicts

by Andy Stewart

**Surely no-one contests the argument anymore. Didn't we bury this conversation decades ago? Is it even possible to imagine a popular song on radio or television these days that doesn't have a film clip? The more crucial conversation should be around when to start planning for it, who will be involved, what it might cost, and when the cameras should start to roll.**

The fact is, anyone who thinks a new song release will penetrate the visually-addicted consumer world of entertainment without a video clip, has either A: recently been found in the Bermuda Triangle wandering around in khaki greens, or B: is twenty cents short in the dollar.

A song without a video is like a car without wheels – it ain't goin' nowhere.

So rather than talking here about the pros and cons of whether a new song release should be accompanied by a video – because frankly, there are no cons – let's consider instead how one should be conjured up in the first place, who might be involved and when, and how much money you're prepared to throw at it.

## Know Your Visual Self

Now, I'm no authority on how to make video clips, and I've only ever been on the pointy end of the process typically, but one thing's

for sure, I'm no fan of having a camera shoved in my face.

So maybe we should start there, and talk about who you are as a musician. Have you ever thought about it from a visual perspective, beyond what clothes you wear on stage?

If you have a single, or album release coming up in the near future, how do you imagine presenting yourself visually (or haven't you thought about it yet)? Because, make no mistake, if you want your new album to get somewhere, it's going to need one, two, or possibly even three film clips.

Are you like me, and feel camera shy or are you ambivalent about it? Maybe you're a natural in front of the camera, the kind of person who lights up at the first sight of a lens. Or perhaps you're a natural actor – that certainly helps! Knowing your strengths



and weaknesses in front of a camera is an important first step towards knowing what kind of video clip you might want to make.

The problem with most music videos made in Australia is that they're typically an afterthought, especially for albums that don't have the backing of a big record label or a production machine around them.

As individuals, most of us amongst this fine CX readership have music and/or audio as our primary focus. Video runs a very distant third. So distant, in fact, that video clips sometimes only come up in conversation after you've walked out the mastering suite's front door with masters in hand. Which means that all those weeks and months in the studio, when your cool instruments were setup and those magical takes took place, are all now lost to the lens! You could have filmed so much great stuff back then, but now it's too late! Bigger.

## Don't Fear It, Own It

It's time musos and producers alike got far more savvy with the visual side of the musical coin, by putting more forethought into what types of video releases are likely to go with certain songs on their albums. I say this only because most consumers of music nowadays watch every song they listen to. To them, a song presents as two inseparable

components: the music and the video. They don't distinguish one from the other. One thing's for sure, if a listener searches for your song on YouTube and it's not there, it basically doesn't exist.

Video, like audio and music, is infinitely broad in its scope; we all appreciate that inalienable fact. But rather than letting the concept paralyse us, we need to face the issue head on, and either get professional help from someone who knows what to do, or start experimenting with the medium just for fun and see where it takes us.

Don't just throw your hands up in frustration at the prospect of having to learn a whole new artistic medium from scratch. You have a phone, don't you? It probably has a kick-ass camera in it that requires you to press a single button to start recording. Complicated stuff.

The point I'm trying to make here is that video clips can be comprised of almost any visual imagery, but like your music, that doesn't mean any old thing will work, or represent you as an artist. Whether you've thought about it or not, chances are that if tomorrow you were presented with different types of imagery for your new video clip, some of it will feel 'just right', while the rest of it will be absolutely out of the question! You are full of musical opinions, preferences and styles – chances are you feel the same way about visuals, though you may not know it! Now is the time to become far more self-aware of this, using your 'eye' for video in the same way you use your 'ear' for music. Get on board with the process, and back yourself.

**How Much You Got?**

Like audio recordings, some video clips can cost nothing. But above zero, the sky's the limit, and when it comes to videos, the bill can often be 10 times higher than the one that came with the album! I've known quite a few that cost about as much as a new car, and others that were the price of a fancy

new instrument... and one in particular was equivalent to a down-payment on a house!

So now is the time to think about your film clip budget, and where you sit on its pricing scale.

Oh, you don't have a budget?

Does you mean you haven't thought about what your budget might be, or are you saying it's zero? Or have you spent everything you've got on the album production?

Hmmm. I would argue that even the most underground video will incur some sort of cost along the way, especially if you know zip about the process. Now might be a good time to talk to a film-maker about it. You probably have a mate who makes films... ring them up!

We're not all made of money, unfortunately, but that mustn't stop you from producing some sort of video for your next song release. Absolute worst case scenario is just a still shot of the album cover, but these days there's far more you can do beyond that without incurring many costs at all.

A good example of a video clip that basically cost zero was one I saw a few years ago, for an ambient album a mate of mine released independently. The audio budget was basically zip, and the film clip budget was even less... so this is what he did.

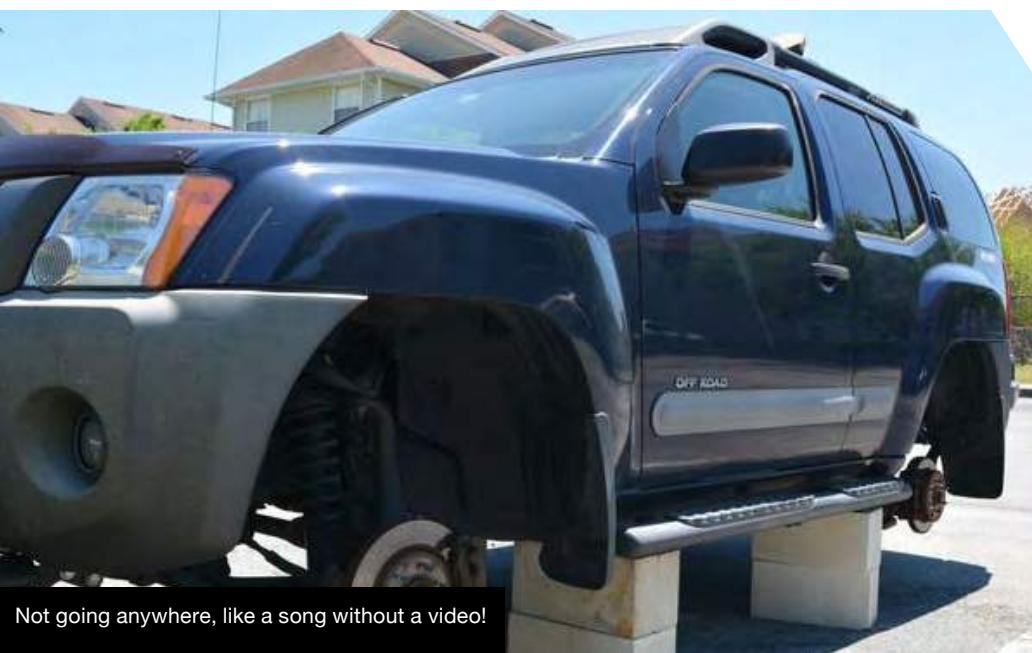
He went out in his brother's boat off Airey's Inlet one calm summer day, and filmed a Pacific Gull floating on the water. Actually, I think the truth of the matter was that he went fishing, and just happened to see the gull floating nearby. He shot the video in slow-motion on his iPhone, paid the gull in fish intestines (a good deal I thought) and that night imported the video into Final Cut Pro on his laptop alongside the audio. Final bill? Nothing for the gull (apart from the aforementioned gizzards), zero for film stock, plus a few dollars in fuel and bait – he already owned the computer and software.

But the film clip looks absolutely amazing, and crucially goes hand in glove with the music. A second clip was done the same way for another song: slow-motion capture of a lace curtain blowing in a summer breeze... sounds tedious but the results were riveting. Cost: zero.

Now I'm not contending that you should try to do everything for nothing. What I am suggesting, however, is that you start experimenting with the visual medium in the same way you experimented with music way back when. Try it, have fun with it... take a chance! There are no excuses anymore, unless you want to publically admit this profound statement about yourself: "I am too old and crotchety to learn something new."

If you're not prepared to admit that quite yet, then get the phone out and get to it!

When you've captured some footage you like, import some of it into your favourite software program (whether it's a fancy Avid system or Adobe Premiere Pro) alongside the audio file, sit with it as you listen to the music, and start to make visual connections between the two. It's not hard, and once you break the ice you may just find that the same aspects of your personality that make music are also quite good at making film clips, thanks very much.



Andy Stewart

Andy Stewart owns and operates The Mill studio in Victoria, a world-class production, mixing and mastering facility. He's happy to respond to any pleas for pro audio help... contact him at: [andy@themillstudio.com.au](mailto:andy@themillstudio.com.au) or visit: [www.themillstudio.com.au](http://www.themillstudio.com.au)

Not going anywhere, like a song without a video!



# Workplace wellbeing a priority post-COVID

by Jenny Barrett

**Entertainment Technology NZ (ETNZ) walks the talk, not only promoting workplace well-being and mental health as a conference theme, but partnering with an employee assistance programme to provide counselling and support to all their members.**

ETNZ contacted Workplace Support, New Zealand’s leading employee assistance provider, in the aftermath of the initial COVID-19 lockdown, “It shows an impressive amount of foresight on their behalf,” comments Charlotte Allen, Business Development Manager for Workplace Support, “They quickly acknowledged the huge challenges facing the industry and the people in it and wanted to put support in place for their membership.”

A year on, and Charlotte was invited to speak at the ETNZ Conference, one of a number of sessions that focused on mental health and wellbeing. Charlotte is a trained critical incident responder, and having trod the boards herself back in the day, has personal insight into the demands that are placed on those working backstage, “It is a stressful occupation in normal times but with the uncertainties of the global pandemic, anxiety has escalated.”

Charlotte explained that stress is a part of life. The key is managing it. She talked about how to recognise the signs of stress and measure where you are sitting on your own personal ‘stress escalator.’ At one to three on the scale, you sit in ‘eustress’, a good type of stress that gets you going and where responses are managed by the Frontal Cortex allowing for rational and reasoned thought. As we climb up the ladder, we need to address the mounting stress, through diet, exercise, sleep, fun and talking. The ‘problem shared is a problem halved’ mantra appears to be true. Failure to notice that you are creeping up and up your stress escalator means the limbic, the fight or flight, part of your brain takes over and you enter ‘critical distress’ or more colloquially put, you are burnt out.

Charlotte’s organisation, a non-profit, offers a range of services to employers, employees or as in the case of ETNZ,

industry representation organisations, “We provide support and help people learn how to respond to changing stress levels, how to de-escalate.”

Workplace Support’s current arrangement for members of ETNZ means anyone can call Workplace Support completely confidentially and access up to a total of three well-being sessions per person per annum which include counselling, financial planning or career direction sessions, with the option for more if required. Workplace Support tailors its services to the employer or organisation, “Some employers want us to help their staff with everyday issues and finances, some want us to support staff through a restructure at work, or a huge period of change. They recognise that people sometimes need to talk to someone other than their family, workmates or boss.”

How this support is delivered varies from one business to the next. In addition to the well-being services, Workplace Support can provide training for managers, speak at events or conduct onsite visits, “Our onsite ‘Staff Supporters’ are trained to prevent day-to-day issues escalating into more serious or long-term workplace matters. They aim to build rapport over time with employees, so that they feel comfortable to talk to them about any work or personal matter that may be affecting them.”

Workplace Support also offer a peer support programme, “We train up members of staff to become a peer supporter who keeps an eye on their crew, and can access support for a workmate who’s ‘missus just dumped me’ and is struggling, for example.” The crucial part of the peer support programme is the regular group supervision that Workplace Support provides in addition to the initial training, “We get together every month to discuss anything that comes up, and we provide refresher training every six months.”

Workplace Support has seen a significant upturn in demand for their services since the arrival of COVID-19, “People are stressed out for a range of personal reasons such as not seeing family and friends, or are worrying about paying their mortgage, being laid off, or a reduction in contractual hours. And I think there is a heightened awareness amongst people generally that they need to take care of themselves and reach out for assistance.”

COVID-19 has arrived at a time when stress levels were already increasing. Charlotte quotes the 2019 NZ Wellness in the Workplace Survey that recorded a 23% increase in staff reporting stress over the two years prior. Just before COVID-19 hit our shores, the NZ Diversity Workplace Survey (March 2020) recorded that 74% of managers identified mental health of employees as their top concern. According to Charlotte, this is translating into action, “We are getting a lot more enquiries from businesses who realise that they need to work with a workplace wellbeing provider. One example is the

construction industry where we have been doing a lot of work about suicide prevention, initiating a conversation and making support more accessible.”

Workplace wellbeing was coming onto the radar for a lot of businesses and industry sectors prior to COVID-19, but in Charlotte and Workplace Support’s view the pandemic and the lockdowns have heightened this awareness, “I think companies and individuals themselves are realising that they can’t wing it where stress is concerned, and they need to take responsibility.”

Charlotte’s presentation at the ETNZ Conference was complemented by Brian Smallwood’s presentation based on his book, “Productivity through wellness for Live Entertainment and Theatre Technicians”. He is also a Production Manager at the School of Theatre & Dance, James Madison University. Conveniently picking up where Charlotte left off on taking ownership of stress management, Brian discussed limiting the amount of pressure that individuals in the industry put on themselves, “We get caught up in the ‘ask’. A client asks for this, this and this, and we do it. We are not Amazon; we are in the prototype industry where everything is a bit unique and takes time and a lot of hard work.”

He promoted not falling victim to schedules, “We put too much pressure on ourselves. Try talking to your employers or clients about your own work-life balance, your need to sleep and exercise. Or if you are going to work fifty, sixty, or eighty hour weeks, you need recovery time. Don’t assume that they won’t want to help.” He also suggested that contractors themselves need to establish boundaries such as not being contactable between 10 pm and 8 am, “You need to unpack tacit agreements and articulate that you are not going to be available all the time.”

Based in the USA, Brian commented that since COVID-19, his belief that wellness had to come first, to foster productivity, was being challenged, “There are many conversations happening around there being less staff now, so more hours, but as contractors you also have some serious agency.” He urged people to use what power they had, whilst also acknowledging that financial concerns may stand in the way.

Combined with Charlotte’s stress escalator and the need to make time for those basics; sleep, nutrition, exercise, talking and fun, Brian’s rallying cry for empowering the individual to make changes hit home. Both presentations were conveniently tied together by the conference’s keynote address from Event Safety Alliance’s Dr Donald Cooper

and Jim Digby. They talked about the need for the old ways of dealing with mental health issues to change, a focus on preventive initiatives, and an overt acknowledgement by artists, agents and managers of the impact of COVID-19 on industry member’s loss of identity as well as livelihoods.

ETNZ as an organisation, with the help of Workplace Support, is ticking those boxes. They have recognised the toll on their members, and by providing access to a counselling, financial planning and career direction service to de-escalate stress and support the membership, are hopefully modelling how workplace well-being can be managed going forward.

**To contact Workplace Support in NZ call 0800 443 445, or if calling from Australia contact your local ET office to obtain the employee assistance provider in your locale.**



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with 32 x 32 network audio channels, eight channels of software-based AEC, along with onboard audio I/O via HDMI, USB and 3.5 mm. The trade-off is video encode and decode capabilities, but nonetheless, Core mode provides a 3 x 2 HDMI video switcher, allowing in-room users to easily share presentation or video content from their laptops or other in-room HDMI sources.

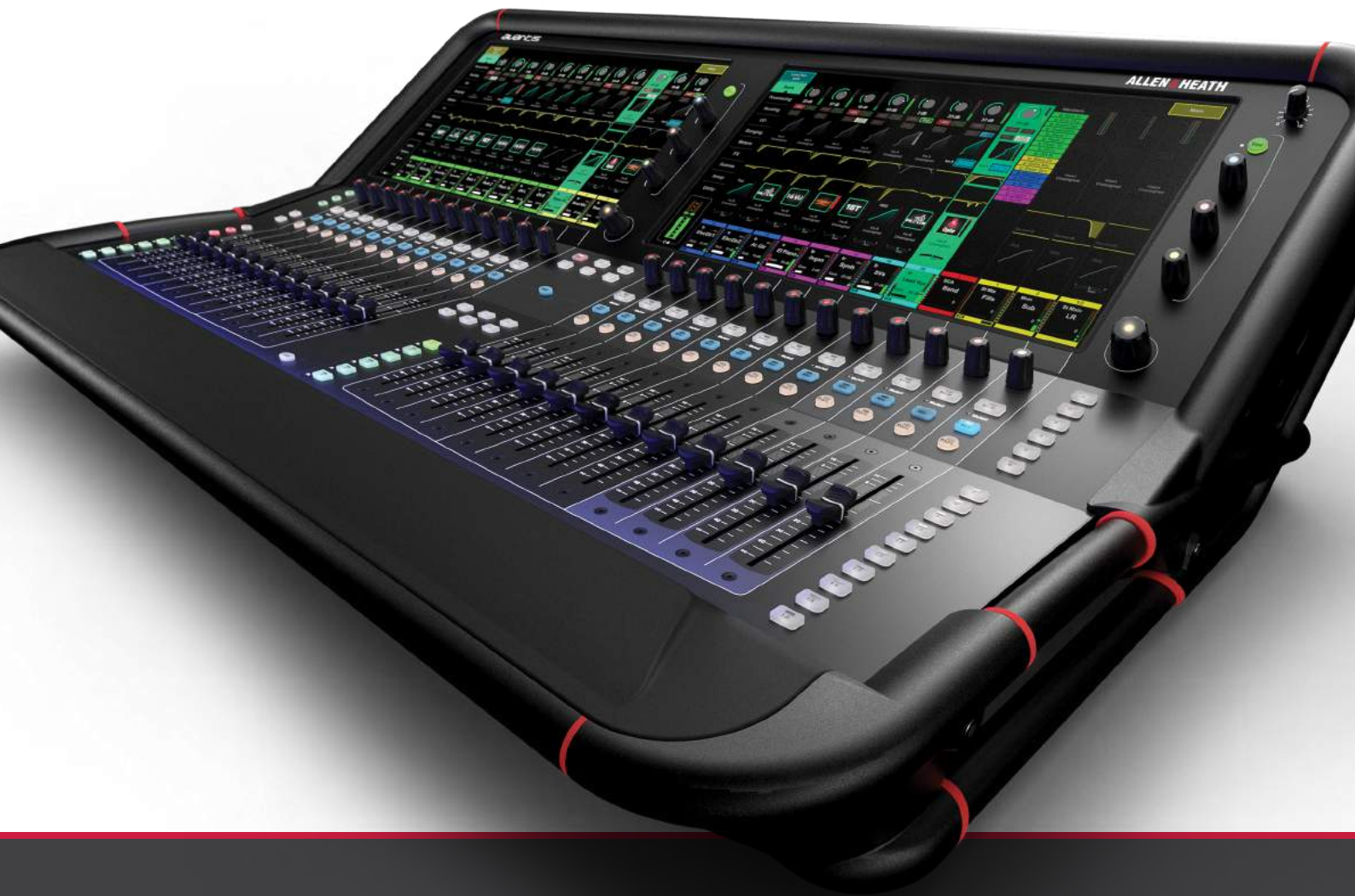
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# Rightsizing Esports: Solutions from Schools To Stadia

by Cameron O'Neill

**Esports, a form of entertainment featuring organised multiplayer video game competitions, is a quickly growing industry that's only getting more popular each year. In 2020 alone, more than 443 million viewers tuned in to watch their favourite gamers go for the glory. Asia currently boasts the largest esports market; the 2018 League of Legends Professional League (LPL) Finals in Shanghai attracted more viewers than that year's Super Bowl. Popularity is now growing in Europe and North America.**

While international finals are often mega-productions held in arenas of more than 60,000 attendees, esports events can range in size from high school-level matches and university competitions to theatrical spectacles. Esports events come with their own set of unique requirements and challenges to consider when designing an appropriate AV system in order to support the action and deliver a dynamic fan experience. In this article, I will examine the basic technical structure of esports applications and how to use that framework to build AV systems for small-scale local events, regional finals, university-level galas, and international championships.

## Why Do We Watch Esports?

To understand why people watch esports, we must first ask why people watch football, basketball, baseball, hockey, soccer and other "traditional" sports. We watch these games because it's inspiring to witness the best athletes in the world perform at the highest level. A lot of people play these same sports with their friends or on local teams, and so we also hope to learn something that might help us improve.

It's much the same in esports; fans are usually gamers themselves, and they want to see their favourite games played at the highest competitive level because it's exciting

Cameron O'Neill is a 20 year veteran of the event industry, having worked at the Sydney Opera House and for Riedel throughout Asia. Recently, he has helped many esports companies in China build their AV systems, including major events, installed facilities, and a major company's network studio system. Cameron is a Sales Director in the Professional Solutions division of HARMAN.

and inspiring. And, just like other sports fans, gamers also hope to learn something that might take their own performance to a higher level. There's an entire industry built up around video games and tons of revenue associated with esports, so there are plenty of financial opportunities for players to become professionals if they practice enough.

## Computers, Consoles and Mobile Devices

In the early days of competitive gaming, personal computers were the most common device used by esports gamers. Today, however, athletes perform on consoles and mobile devices in addition to PCs. Computers are the easiest platform to interface with an AV system, because they have a variety of outputs and offer granular control over system settings. Consoles feature standard outputs like HDMI, making them simpler to set up but yielding less control over the settings. Gaming on mobile devices is relatively new and we have less experience and limited technology for interfacing, but 60% of all new gamers are playing exclusively on mobile devices. AV professionals need to be prepared to deal with any or all of the above types of devices.

## Types of Esports

It's important to consider what type of game is being played at each event, as each genre has its own set of technical requirements. There are four main types of esports games, which pose increasing degrees of complexity when it comes to preparing the AV system: Sports Simulators, First-Person Shooters, Real-Time Strategy, and Battle Royale.

**Sports Simulators**

This category includes games that simulate real-life sports like soccer, football, basketball, baseball, hockey and boxing, but we also include fighting games like Street Fighter and Tekken in this category. Matches can range from two individual players to two teams with three to five players each. This type of game is usually the simplest, from an AV perspective, because all of the players see the same screen. Because of this, there's no reason to keep players from being able to see what's happening on other players' screens, and they can be grouped closer together.

**First-Person Shooters**

The second category consists of first-person shooters like Call of Duty, Counterstrike (CS:GO), and Overwatch. These games are characterised by high-speed action with each player having their own unique point-of-view. The main challenge with first-person shooters is that you can't see the whole map at one time. Another challenge is that the speed of gameplay combined with the first-person perspective has the potential to cause motion-sickness for audiences watching.

In order to give the audience the best viewing experience, the best method is taking a video feed from "ghost players" that run a spectator mode of the game. They have the freedom to move, fly and zoom around the map but are invisible to the players and can't interfere in the action. These players function as phantom camerapersons. Keeping out of your competitor's view is a main tactic, so teams need to be isolated so that they can't see the other teams' screens or the main video screen.

**Real-Time Strategy**

In this genre, players control multiple characters from a top-down view. These

games usually simulate the strategies of commanding generals at war with an enemy force. Each individual player has a field of view that is limited by a "fog of war," meaning the player can only see areas they've explored, and can't necessarily see the enemy's territories. By contrast, the viewing audience needs to be able to see the whole map or arena. Again, this requires a spectator player to provide a complete video feed of the entire map.

**Battle Royale**

The final category of esports games is one of the newest genres being played. Battle royale games have exploded in popularity in the past few years, with popular titles like Fortnite and Apex Legends, leading the market. These games host up to 100 players in the same arena, with the simple goal of being the last player standing. From a technical standpoint, these games are similar to first-person shooters, but with a third-person perspective. Another difference is that the majority of players are gaming on mobile devices, so accommodating this type of input is crucial.

**Two Audiences**

A typical esports event will have two audiences: a live in-person audience and a streaming audience, tuned into the broadcast from home. Each audience has its own set of priorities, and the needs of both must be considered when designing an event. For example, the live audience wants an immersive audio experience, with the same intensity as a rock concert. Meanwhile, the broadcast audience needs clarity to clearly understand the commentary. On the visual side of things, the broadcast team needs bright, clear lighting for their cameras to operate properly, but the live audience wants an engaging light show with rich colours and dazzling effects.

**Audio Systems for Esports**

From an audio perspective, we need to be able to mix a variety of sources (player intercoms, in-game audio, judges, coaches, and shoutcasters) and deliver separate audio feeds for the live audience, broadcast audience, and possibly to the athletes themselves. In order to accomplish this, we need to utilise an audio matrix. An audio matrix enables any input to be routed to any output or multiple outputs, and many matrices support mixing as well, simplifying the workload of the live and broadcast audio engineers.

Traditional audio matrices are typically single-unit devices that can be connected by a proprietary format and include transport between various areas of the event space. The downside of the traditional matrix is that it's usually limited to a certain number of inputs and outputs, and if you exceed that, you'll need to buy an additional device. Fortunately, the ubiquity of Audio-Over-IP (AoIP) standards such as Dante or AES67 now makes it possible to distribute any number of audio inputs and outputs over a network. Network matrices are only limited by the bandwidth of the network itself.

Utilising a network audio matrix, we can receive the audio signals from a high number of sources, including player devices and team intercoms, as well as microphones for the players, judges, coaches, and shoutcasters. We can then transmit them to the front of house mixer, broadcast mixer and player intercom systems, as well as route them through signal processors and networked amplifiers.

**Lighting Systems for Esports**

Lighting also needs to be approached carefully at esports events, because the



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goal is to simultaneously deliver high-quality visual experiences to the live and broadcast audiences. Lighting fixtures from Martin and other brands, used in esports, generally fall into four categories:

**Broadcast Fixtures** – Dynamic light is great for live audiences but causes problems on camera. The camera operators will need sources of natural white light in order to capture the action of the players. These fixtures are placed close to the stage or player areas.

**Front-Of-House Fixtures** – Natural white light is great for cameras but looks flat and boring to live audiences. Interesting and dynamic wash lighting creates a dramatic mood for the audience. These fixtures are placed farther away from the stage.

**Effects Fixtures** – Automatable moving-head fixtures can create an exciting spectacle in the arena, ensuring a satisfying live entertainment experience for the audience.

**LED Walls** – High-resolution video walls are required so that audiences can see the action. Intelligent hybrid LED fixtures can also accept video inputs and create appropriate lighting content to match the action onscreen. Colours can also be used to signify different stages of gameplay—for example, red lights may mean that a bomb has been set in-game.

### Video Systems for Esports

Just as we discussed with the audio and lighting systems, we need to design the video system to accommodate the differing requirements for the live and broadcast audiences. The live audience may only need to see the gameplay on screen, with occasional camera close-ups, while the broadcast audience will likely need a combination of gameplay and camera footage of the players, shoutcasters, and audience.

In order to show the gameplay to the audiences, we utilise dedicated spectator devices to provide the video feeds. This

ensures more control over what the audience can see, with the added benefit of keeping lag associated with video-interfacing out of the player equations.

### Rightsizing Your Esports Event

Not all esports events are created equal, and an AV system utilised at one event may not be appropriate for another event on a different scale. If you're tasked with handling the AV for an esports event, this section will show you the essential equipment you'll need to produce quality experiences for your audiences.

For small or mid-sized high school or university-level competitions with a limited in-person audience, you'll need:

- **Player Intercoms:** These enable teammates to communicate with one another during a match.
- **Gaming Headsets:** These allow the gamers to hear the game audio with zero latency.
- **Spectator Device** – This is a separate device installed with spectator versions of the games being played.
- **Streaming Software** – This is an application that handles simple video mixing tasks and stream encoding, such as Streamlabs OBS, OBS Studio (Open Broadcaster Software), or vMix Free.
- **Lighting** – Standard venue lighting is more than adequate for events at this level.
- **Audio** – A small digital mixer can handle audio feeds for people in the room and the streaming audience. Portable JBL EON powered speakers will cover a medium-sized room with no trouble.

For large events with audiences of more than 300 people, consider adding the following:

- **Matrix Intercoms** – Reidel and ClearCom make dedicated communication systems for failsafe operation.
- **Spectator Device** – Many games offer a Tournament Mode version for higher-profile events.
- **Streaming Video Mixer** – OBS or vMix Free may not cut it at this level. vMix 4K offers recording capabilities and higher resolution for graphics.
- **Live Video Mixer** – For audiences of this size, a Ross Graphite hardware mixer gives greater control over more video input and output options. A projector and large screen are also required to display the video signal.
- **Lighting** – In addition to standard venue lighting, include natural white light for cameras and moving lights for dynamic effects.
- **Audio** – You may want to consider upgrading the portable powered speakers to JBL VTX line arrays or other larger PA systems, similar to those found at concerts.



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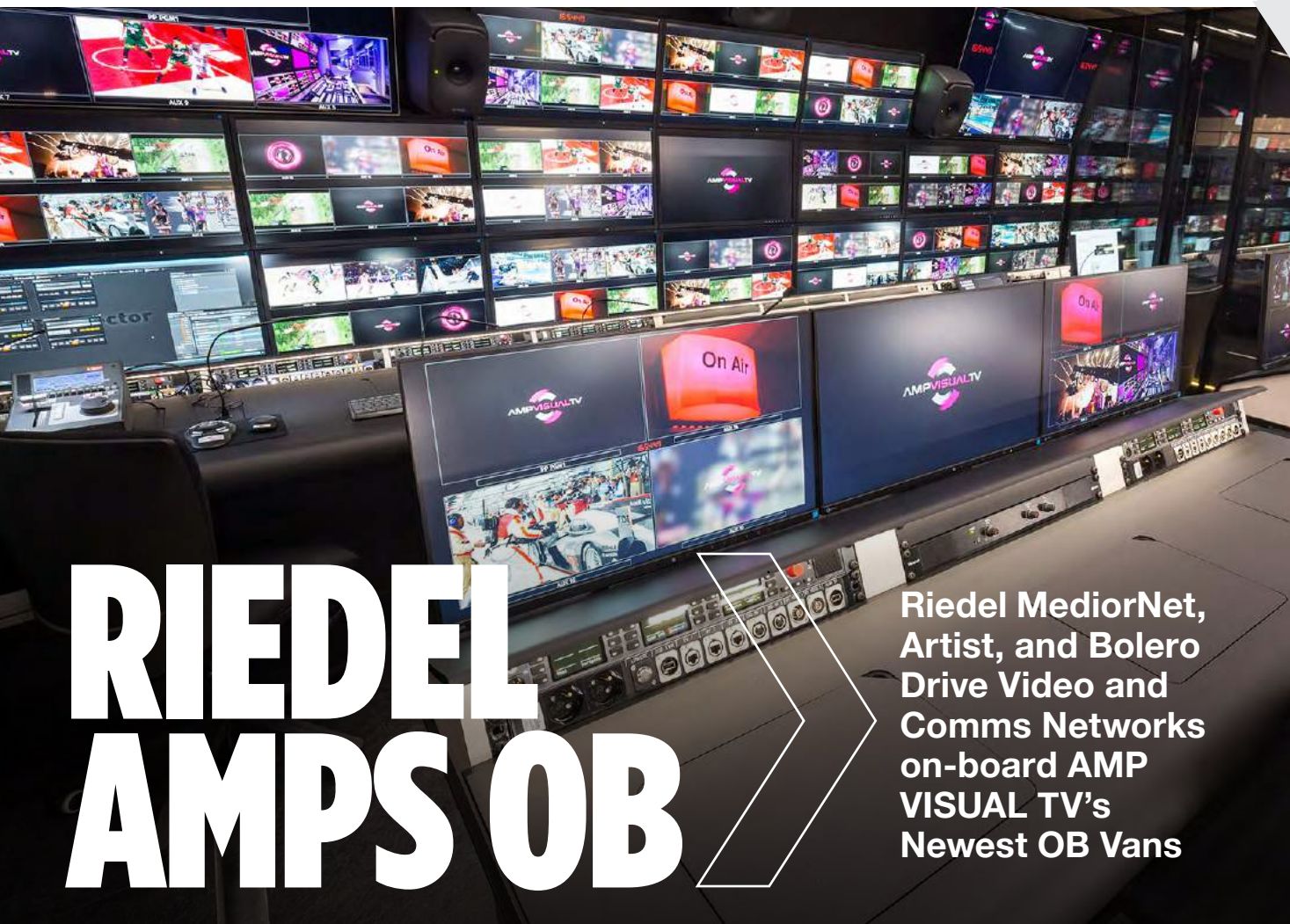
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# RIEDEL AMPS OB

Riedel MediorNet,  
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on-board AMP  
VISUAL TV's  
Newest OB Vans

**AMP VISUAL TV, a leading French provider of outside broadcasting (OB) facilities and production services, has chosen Riedel's cutting-edge solutions to provide signal routing and processing as well as communications on board its all-new Millennium 3 and Millennium 4 live UHD production vehicles. A Riedel MediorNet real-time network drives 14 camera (10 4K capable) productions for both trucks, and Riedel's Artist digital matrix intercom and Bolero wireless intercom enable reliable, flexible, and seamless crew communications.**

Specialising in live television production, AMP VISUAL TV provides broadcast services across the entire production chain. The company boasts one of Europe's largest fleets of OB vehicles, 44 in total, and also operates 29 studios in Paris, eight with fixed control rooms. A couple of years ago, Riedel

Communications had the opportunity to work together with AMP VISUAL TV on the launch of its flagship Millennium Signature 12, a 44 camera (22 4K capable) van driven by a massive MediorNet signal transport infrastructure. Fortified by its success, this unit was swiftly followed by the Millennium

6 OB-van project, also based on Riedel technology.

"We had an outstanding experience working with Riedel on Millennium Signature 12, the first OB van in Europe that was fully based on MediorNet video routing and processing technology. Not only has MediorNet been a huge success on our Millennium Signature 12 and Millennium 6 OB vans, it also drives live coverage on our DSNV vehicles and has been instrumental in live broadcasts of our 24 Hours of Le Mans series," said François Valadoux, Chief Technical Officer, AMP VISUAL TV. "Therefore, it was logical to turn again to Riedel to provide a fully decentralised and future-proof hybrid infrastructure for Millennium 3 and 4."

The modular and networked DNA of MediorNet makes OB vans, fly-away control rooms, and stage boxes fully interconnectable, enabling combined mobile units to address bigger productions while ensuring they can each operate effectively in standalone mode for smaller jobs. Reflecting this logic, Millennium 3 and 4 are each designed for daily UHD video productions while also having the ability to expand for bigger productions by simply merging with any other systems from AMP VISUAL TV fleet with Riedel technology on board. In this manner, the combined Millennium 3 and 4 units provided coverage for



the last UEFA Champions League match in Paris early in March.

François Valadoux added, “MediorNet is at the heart of our philosophy of providing a fleet of OB units that can be easily shared, combined, and redispached on the fly based on our daily production requirements. In particular, the latest MediorNet MicroN UHD modular devices play a key role with their amazing 48 port video density, with rack space savings that are always welcome in mobile applications, together with 400G bandwidth horsepower for creating virtually

limitless mesh topology scenarios.”

In addition to MediorNet, Millenium 3 and 4 boast an IP communications infrastructure based on Riedel’s top-of-the-line Artist-1024 digital matrix intercom paired with Bolero, which AMP VISUAL TV recently named as the wireless intercom standard for its entire operation. The communications system also includes a mix of Riedel’s IP-based intelligent user interfaces of the 1200 and 2300 SmartPanel Series.

“AMP VISUAL TV is not only known for its

bespoke coverage of some of the world’s biggest events and production of marquee television programs, but it’s also recognised as a pioneer in advanced technology applications such as UHD OB services, wireless video or remote production,” said Franck Berger, General Manager, France and Africa, at Riedel Communications. “With these latest OB projects, AMP VISUAL TV is demonstrating its commitment to staying on the leading edge of innovation in OB production, and we’re very proud that Riedel is such a key contributor to this ongoing effort.”





# Hippotizer Boreal+ punches powerful visuals for Triller



**US-based lighting and video designer Tony Caporale was at the visual helm for the new ‘Triller’ boxing and music event in Atlanta, Georgia, harnessing the punch and power of Hippotizer Boreal+ Media Servers to drive a host of LED screens at the city’s Mercedes-Benz Stadium.**

Music heavyweights including Snoop Dogg, Justin Bieber, and Diplo joined boxing big-timers Jake Paul and Ben Askren for the event, which took the US by storm.

A pay-per-view audience of more than 1.5 million watched as the fights were interjected by pop performances, with each requiring a feast of visual delights to match the action. The boxing ring area had two portrait LED video screens for fighter entrances, a single LED video wall above the announcer booth, with another LED screen used as a fascia for Diplo’s DJ booth, and the performance stage had five screens.

“This was a lot of video, right?” says Caporale, who was brought in by project Lighting Designer Tom Kenny and PRG Account Rep Anthony ‘Looch’ Ciampa. “But that’s not all – we also rigged a load of Revolution Blade LED strips and VDO Sceptrons throughout the set scaffolding, driving the content across the whole stadium. We pushed the visuals to the limit, and I’m happy to say the two Boreal+ servers handled it all, considering how hard we were pushing them.”

Caporale discussed the hefty visual requirements in pre-production with Luke Lewis and Anthony Wilson from PRG, and landed on the Boreal+ Servers.

“I knew we had to have Hippotizer’s + models out there to handle the weight of this show,” explains Caporale. “I had a lot of mixes to distribute so I needed a workhorse I could rely on.”

Visuals for the fight action were created by Studio Moross, with each music artist’s creative teams submitting their own content for the performance stage. In addition, Triller show creators Ryan Kavanaugh and Bert Marcus and their teams supplied promo material and additional b-roll footage. For the performance stage, all the content was locked to timecode and provided by the respective artists’ creative teams.

The rig was controlled by a main and tracking backup for both the grandMA2 consoles and Boreal+ Media Servers via MAnet.

“One of the things that impressed me most about using the Boreal+ was the Fade on

Layer feature, which was key,” says Caporale. “Since I had so many mixes to distribute content through, I knew I was already taxing the layer count on some of the mixes and it was dragging my FPS. I was able to change a few mixes from eight layers to four and along with the use of relay I managed to save enough system resources.”

The results were, in a word, big, as Caporale continues; “The show designers created a look that was very industrial and edgy. Tom definitely wanted this to feel like a concert and not bland. With all the screens scattered around the set, along with the Revolution Blades and Sceptrons it gave the staging a lot of depth so there were a lot of different ways to break it up or make it feel unified.

“For some looks, I would select a cool geometric pattern to flow through the blades and match the tempo of the song. In other instances, I utilised the relay feature and sampled a piece of the artist content in the Blades, especially if they had music hits and accents in their content so it could translate through the Blades musically. For an event of this size, you go with what you know best and what can proficiently get you the results you need.”

For the Atlanta Triller event, Dave Gelineau from Echo Entertainment served as Producer/Director, Rick Seigel as Director of Photography, Drew Rivera as Visionary Group Technical Director, with Visionary Group overseeing Creative and Art Direction alongside Mike Hess and Juliana Jaramillo as Art Directors.

# Sometimes it all gets too much...



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# Upstaging with Absen LED

by Jason Allen

**A.B. Paterson College is a non-denominational, co-educational private school at Arundel on the Gold Coast. Its Dawn Lang Performing Arts Centre, named for the second Principal of the College, seats 388 and boasts both a fly tower and an orchestra pit. Theatre Head Technician Alex Fox has made it his mission to ensure that the theatre is kitted out with industry standard tech, including a new Absen LED wall.**

After 10 years as Head of Lighting at the Gold Coast's HOTA, Alex moved over to the College in 2018. "My role is to run all the admin for the theatre, as well as operate audio and AV on the bigger shows," explains Alex. "I have a few casual crew who do most of the day-to-day ops, which is drama and dance

classes during the week, college events at night, external hires, and end-of-year functions."

The lighting rig boasts a respectable, professional inventory, comprising 12 Acme XA400 spots, four Acme 300ZR2 washes, four Robe Robin 600 LED washes, 20-odd generic

LED pars, and a bunch of ETC Source 4 conventionals. Control is via grandMA3 on PC going out through an MA3 Port Node.

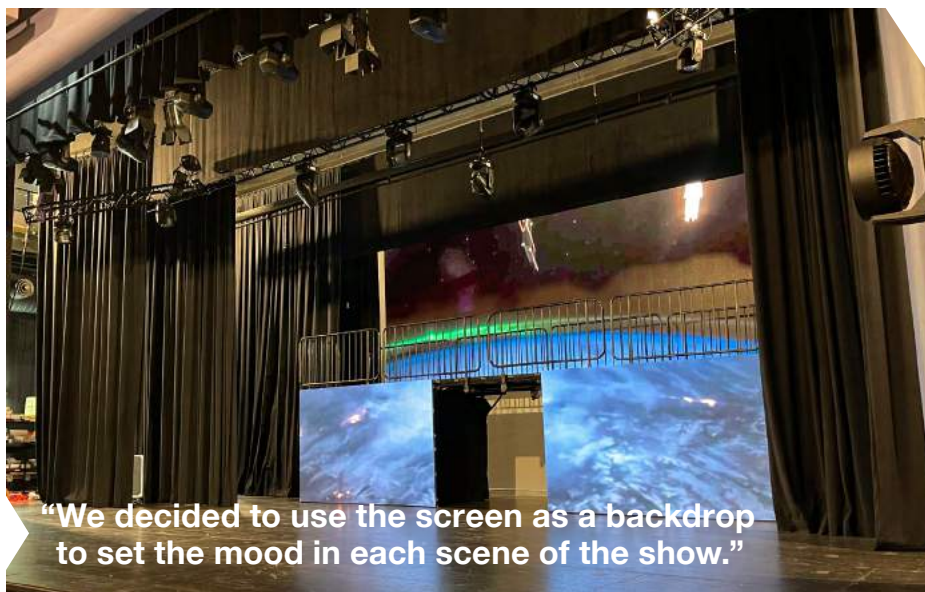
Audio is similarly polished, with a DiGiCo SD9 with D-Racks running a Nexo Geo D line array powered by Camco amps. Students and hirers get mic'd up with Sennheiser 100 Series radio mics.

Which brings us to video. Alex and the team had issues with projection, previously the only way to get video onto screens or the upstage cyc. "We don't have room upstage for rear projection, and front projection always cast shadows and irritated everyone," he states. Alex knew that a LED wall solution was going to be the answer.

Alex measured up the upstage space between the legs and the border, and determined the dimensions needed for a screen would be 11 metres wide by five metres tall, with a bit of overlap out into the borders for a seamless look. After demoing various solutions on the market, Alex narrowed the field to Absen PL Series, in 3.9mm pitch, distributed in Australia by Audio Visual Distributors. They put the order in for 120 panels.

"I've known Audio Visual Distributors' Blair Terrace through the lighting industry for years," Alex says. "He handled the demos, and worked out a viable price for us at the College. When we took delivery, Blair came in and taught us how to build the wall, tested it all, and then handed over. The service and the product have been rock-solid."

It's not just the theatre that's going to benefit from the new LED capabilities. "The



“We decided to use the screen as a backdrop to set the mood in each scene of the show.”




processing for the screen is NovaStar VX6S,” Alex continues. “We bought two so we can take 30 panels off the theatre screen, pop them in roadcases, and wheel them into the Sports Hall, hang them off their bar, and use the second processor. The Sports Hall always had issues with its large windows and natural light. Projection screens would get washed out by the light and moved around by the breeze. Text was illegible. It was the dual benefit to both sport and the arts that really

got this purchase over the line.”

Despite the delivery of the screen being slowed down by the blockage in the Suez Canal and a COVID outbreak in Shenzhen, it turned up a week before the annual school musical, which this year was Guys and Dolls. Alex relished the opportunity to test the new screen out before unleashing it on the students and staff.

“We decided to use the screen as a backdrop

to set the mood in each scene of the show,” informs Alex. “Our arts staff produced different still images and I’d get a Photoshop or Illustrator file, take it into Adobe After Effects or Premiere, and bring it to life with animation. My gaming laptop runs the Adobe suite, and I’ve networked it to a computer running QLab. That sees the gaming laptop as an NDI source. QLab then outputs Premiere or After Effects from the network, so I can edit on the big screen, move and resize on




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## VIDEO

the fly without going backwards and forwards between computers, which is a tremendous help.”

Alex sends signal to the screen via a Blackmagic Designs ATEM 2 M/E Production Studio, which sends programme out and six auxiliaries. The screen is run in parallel with a projector, and the ATEM can turn the projector on and screen off or vice versa at the push of a button. QLab handles mapping, resizing, and virtual screens.

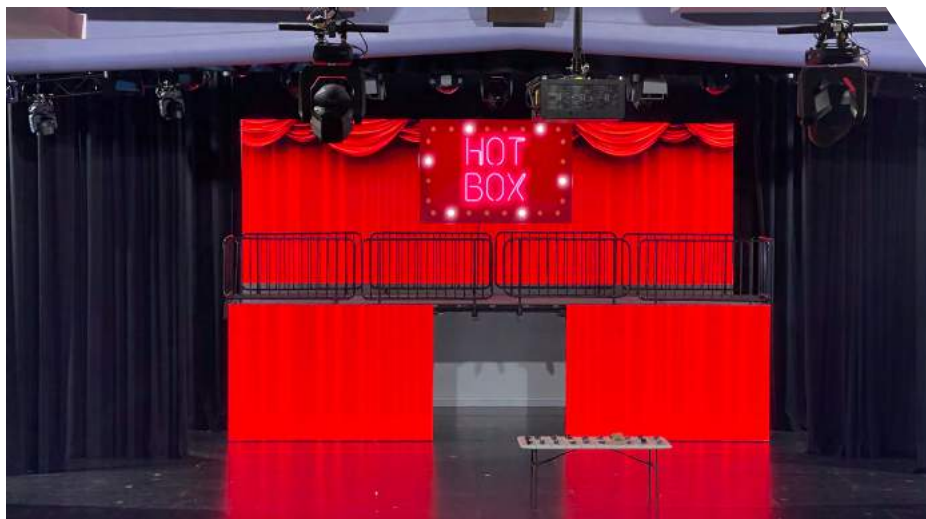
“The new capabilities of the screen have seen the director, set design, and graphic design all keen to work on new ideas,” enthuses Alex. “In the past we’d done false floors and built and painted sets. We’ll still do that, but the screen gives us more ideas and options. With 120 panels, the screen can break into any design we want. We’re looking at LED legs for the next couple of shows. There’s a whole range of options that we hadn’t thought possible before.”

It’s not just the staff who are excited. “The students came back from holidays last Saturday,” Alex adds. “I got them to sit in the audience, lit up the screen and pulled out some neon sign graphics from the show. There was a big united ‘Wow!’ from the students. Everyone loves the LED screen. The kids want to do new things with it that they couldn’t do before.”

Visually, the Absen PL Series is outperforming Alex’s expectations. “The colours are rich, and the contrast when you get down into greys and blacks is really nice, which is what I was hoping to achieve,” he evaluates. “Every image, night, day, or otherwise, looks beautiful. The brightness of the output is great. I’m running the processor at 50 or 60% so it doesn’t overwhelm the lighting rig. I was originally concerned that the indoor model wouldn’t have the power I needed, but we are overshooting what we need and still have power to spare.”

Manual handling is easy for staff and students, with each panel a modest 13kg. “They come out of the roadcase and onto the hanging brackets with no problem,” reports Alex. “The quick connect locks make it very easy to piece together. All the modules are magnetic within each panel, so if there’s ever a problem with section of pixels, you can pop it out and replace it easily without having to dismantle the entire screen.”

After spending 2019 bringing the theatre’s technical standards up, then pausing due to COVID in 2020, Alex is ready to bring quality tech education to the College. “Industry tech education is the next project I’d love to tackle,” he affirms. “Students need to learn on industry standard platforms, and should be taught on equipment they’ll go on to use in the real world.”



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# SHARING VIDEO FILES ONLINE

by Benjamin Powell, founder of BetterCast

If you ever find yourself needing to send a client a video after an event, don't just throw it in your Dropbox and call it a day. There are some different options that will save you money and be so very much faster, regardless of your internet connection, especially when you're sending massive files.

Most clients will want some documentation of their event, and if you recorded an eight hour event at 1080P, then each file may be more than 30GB. If you had two or even three cams, you know that it can be a huge problem getting their files to them.

Sure, you could go out and buy a thumb drive, then post it to the client, but that could be problematic, and you end up doing more work helping them get the files off the drive, or it gets lost in the post.

So the apparent way now will be to send the file through the internet. However, I'm sure you are already thinking that you're going to have to leave your computer on for days to get it uploaded, or you have done it before and then had your browser time out as it's trying to get the file into the cloud.

In today's article, I want to talk about some of the options you have to make the wrangling of your client's video data easier on you and them!

## WeTransfer

Started in the Netherlands in 2009, WeTransfer focuses on one function and does it pretty well, sending files from one person to another. The interface is super simple, and while it's ad-supported, the ads have a rigorous vetting process. If you have a paid business account, you can opt out of the ads and have your images instead.

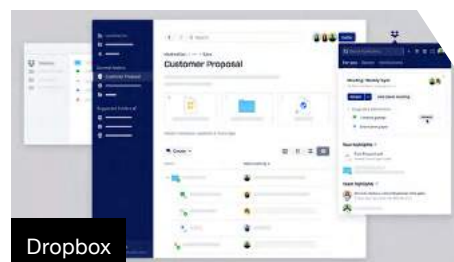
Their free account will only let you send a max 2GB file, but if you move to a paid version at about AUD 20 a month, you can send up to 200GB and store 1TB.

The drawback for WeTransfer is that their servers are in the US and EU, so you're going to be spending a long time uploading files due to international bandwidth. And if you have any data with user sensitive information, you may run into some security or privacy issues.

And unlike the following few services, they don't have any desktop services that connect

your local file system to their servers, so you have to upload directly on their web interface, which can be a little annoying in some cases.

## Dropbox



The service that pretty much everyone knows, and many people use it. However, some limitations make this not the best value or choice, in my opinion. The primary issue is that if you have a large file and you go through the trouble of adding it to a folder and then share that folder with a client, and they don't have a paid account, you will instantly max out their account and make it unusable.

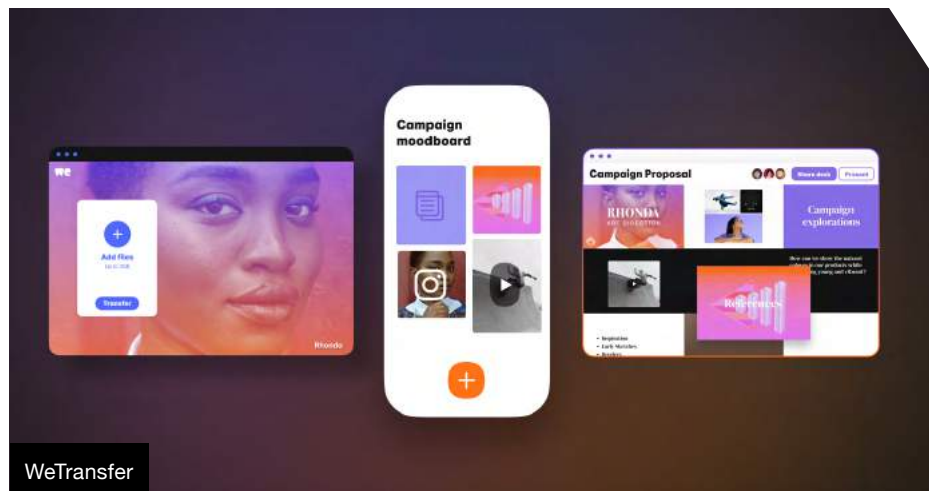
I think that this is a strategy by Dropbox to force free users to upgrade, but honestly, I think it's kind of a cruddy move and one that turns me off their service.

For a basic business account that will let you send up to 2GB files, you're going to be paying AUD 17 a month, but you need to have three people minimum, so it's going to be AUD 55 a month. If you need to send more, then go to the AUD 27 account per person (minimum three), and you can send 100GB.

They do have some great apps, integrations and solutions that make life easier, and almost any service that needs storage will connect to your Dropbox account. However, they have some limitations, as I mentioned, which made me look elsewhere.

## Google

Google is working to move all their drive and other apps into a service called "One" for personal accounts or "Google Workspace" for business accounts. It's getting confusing what they are doing, honestly.



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The business account will get you all the Google services and will only set you back around AUD 16.50 a month for 2TB storage. Still, like Dropbox, to send a file, you are adding it to your drive and then sharing the folder, so you're running into the same issues as before with storage limits for your clients.

The benefits are that if you're using Chrome, then you're ready to go, and the number of integrations and apps that you can install is practically endless, and of course, the desktop app.

Google has many servers worldwide and has a data centre in Sydney so that you will see some speed increase, but you're sharing bandwidth with every single Google user in the country, so there are some limitations.

I still think there is a better way...

## AWS S3

S3 is the service that I prefer and use for so many different applications, and if you move onto it, you will wonder why you never went here before. First off, you only pay for what you use, with no monthly fees if you have no gigs, you're not stuck with a monthly bill, and if you have a gig that is huge one month, but then the next few months you don't need it, you're not stuck paying enterprise pricing.

Sydney servers mean that uploads are super fast, as you are only sharing bandwidth with enterprise software and applications rather than millions of public users. Costs are a little

finicky, but you will not pay anything to upload your data to your S3 bucket.

Storage will cost you AUD 0.025 per GB for the first 50TB per month, and then downloading the data will cost you nothing for the first 1GB in a month but then AUD 0.114 per GB up to 10TB in a month. So, if you are going to be sending a file of 30GB to a client that they can download in super-fast time, that would cost you just shy of AUD 4 in total.

Let me explain how AWS works a little and give you a few tips to get you started.

You need to make an account on AWS (Amazon Web Services), this will give you access to all the services that Amazon have, and my god, do they have a lot of products. For now, we're only going to be using one called S3. Go to their S3 (Simple Storage Service) link, and you will then make a bucket. A bucket is a name they give the drive you will add your files into. Then you can select the region that you want your storage to be in, AWS has servers all over the world, but I recommend choosing Sydney as a default.

Technically at that point, you can start uploading files as large as you want, and they will all move at a lightning pace, so that is easy. Then when they are uploaded, you will have to make the file public, and then you will get a link that you can give a client.

The file size limit for a single upload to AWS S3 is 5TB, so I think you're going to be pretty OK no matter what you do.

I am simplifying it a little, but with a few Googles, you can get all the hows for this in seconds. To make it much easier, I suggest getting the software called Expandrive.

Expandrive is a AUD 55 application that will live on your desktop (Mac, Windows and Linux) and allow you to manage your S3 buckets, create new buckets, upload/download files from your desktop, and then create the share link to send in an email.

Expandrive will also connect all your Dropbox, Google and any other file storage account into your desktop as well, so it's freaking fantastic for managing your files.

To get Expandrive to work with your S3 account, you need to create a user in their IAM (Identity and Access Management) portal. It's 3-4 clicks to make a user and get the access keys that you will add into your Expandrive application, and then you will get instant access to your files.

You can now move a massive video file from your desktop to your Expandrive folder on your computer, and it will instantly upload to your cloud S3 account. You will need to change the file's permission to a public and get the sharing link, then that is it, email that and you're good.

If you want to keep all your files in storage, but you know you're not going to access them that often, you can change the storage type from S3, where you access the data constantly, to what AWS calls Glacier, and your storage costs go down to AUD 0.005 per GB per month so that 30GB file will cost you AUD 0.15 a month to store forever.

While Amazon Web Services is more complex to set up, the cost savings and speed of delivery you get far outweighs the setup complexity. Also, if you create a new AWS account, you get AUD 300 in credit as well, so you could spend nothing at all for the first 12 months of your account, saving you up to AUD 720 if you were to use Dropbox! You don't have the team sharing and editing functions that you would on the other services, but honestly, if you need to get your data to your client, and you don't want to be spending a tonne of money to do it, and you want the job done, AWS S3 is the way to go.

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Multifunction Room

# RMIT's Building 106 – The Meeting Place

by Jason Allen

**The casual observer doesn't notice, but Melbourne's RMIT University occupies a surprisingly large amount of the north-eastern end of the CBD, extending into Carlton. With staff spread through a host of buildings, often repurposed from business or residential, the University jumped at the chance to bring their entire operations and admin staff together in one location; the spectacular and recently vacated tenancy previously held by Sensis in the QV building.**

The three-floor tenancy includes a stunning atrium reborn as Ngargee ('gathering place' in the local Woivurrung language), a town hall and presentation space. The University now boasts the most collaborative and flexible workplace its staff have ever enjoyed, standardising the Microsoft Teams platform through a Crestron backbone. Workers in the office, and the vast majority working remotely at the moment, enjoy the same reliable and

easy-to-use AV experience in every space. And as we all know, 'easy to use' is in reality really hard to achieve!

#### Breaking Ground

RMIT's AV Delivery Manager at the time of the project, Nikesh Kapadia (who has since moved on to AVRUS Solutions) had begun the groundwork on new AV standards for the University long before Building 106

was a prospect. "We started our meeting room environment journey over two years ago," relates Nikesh. "We trialled solutions, starting with Skype, and have eventually moved to Microsoft Teams. The idea is to bring everyone together, and we were really focussing on the collaboration platform and supporting systems. We are also aspiring to have wireless presentation everywhere, moving away from cables."

Along the way, Manoj Indraharan of engineering consultancy WSP, who's had a long relationship with RMIT throughout his career, came on-board to work through all of RMIT's user interface and back-end system options with Nikesh's team. "Previously, RMIT had used a combination of different codec-based video conferencing platforms, along with three different control styles, which they'd already begun to consolidate," outlines Manoj.

"We prototyped the solutions of our small, medium and large systems with Insight Systems and Crestron," expands Nikesh. "We delivered 40 installs of our new meeting room standard using Crestron Flex across the University before work on Building 106 began."

**AV Standards**

Project Director Jeremy Hearst joined the quest for standardisation a bit more than a year after RMIT and WSP had created their concept design. “We did some further work with Manoj and WSP,” says Jeremy. “While we have some very specific user requirements in our specialist spaces where we run training, our standard spaces are 90% of our requirements, and are driven by our AV design standards. RMIT as a whole really needed standardised products. We’d gotten to the point that rooms had different systems, and the user experience wasn’t consistent. Moving over to Microsoft Teams has increased our remote meeting capability and enabled us to use more general AV kit.”

With the road map of RMIT’s new AV standards in place, the team were more than excited to implement them when the opportunity to occupy Building 106 came up. “A few things fell into place with Building 106,” retells Jeremy. “A number of existing buildings were coming to the end of their leases when the QV lease became available. We saw it as an opportunity to consolidate the operations portfolio, which had previously spread across three buildings. The technology road map was another driver; this was an opportunity to create more flexible and collaborative ways of working.”

**Project Management**

The project to fit-out the three floors of the QV building officially began in late May 2019. The tender document went to market in August. Integrator Insight Systems responded successfully and were appointed to the project in October 2019. Construction began

in November, with a forecast completion date of March 2020. We all know what happened next, but for once, this was more a positive than a negative.

“Honestly, lockdown was a blessing in disguise, as it took the pressure off,” concedes Manoj. “It gave Insight Systems more time, and the leeway to do things properly, instead of being rushed by the staff’s imminent return. They actually had clean, open sites to work in, which is a rarity.”

“I’d been working with RMIT for five years,” states James Jory, RMIT Account Manager at Insight Systems during the project (he’s since moved on to ELB). “I’d seen them transition from what I’d call ‘traditional AV’ to pushing the boundaries of innovation. In the designs for Building 106, we could see in both the architecture and AV that it had been a massive collaborative effort. We then got a lot of time to talk details and supportability with both RMIT and WSP, which we never normally get on a project like this, which was a fantastic experience.”

**The Gear**

You’ll find the Crestron Flex suite of products integrating with Teams throughout Building 106, along with their AirMedia wireless presentation systems, TSS 10.1” touchscreens for room booking, and TSW touchscreens for control. NEC are the interactive display provider of choice. Small meeting rooms are controlled via the tiny Crestron RMC3 media controller. Medium meeting rooms benefit from a Crestron Soundbar, and Large meeting rooms add Crestron audio DSP, Logitech Rally PTZ cameras, an Extron video scaler, and Extron

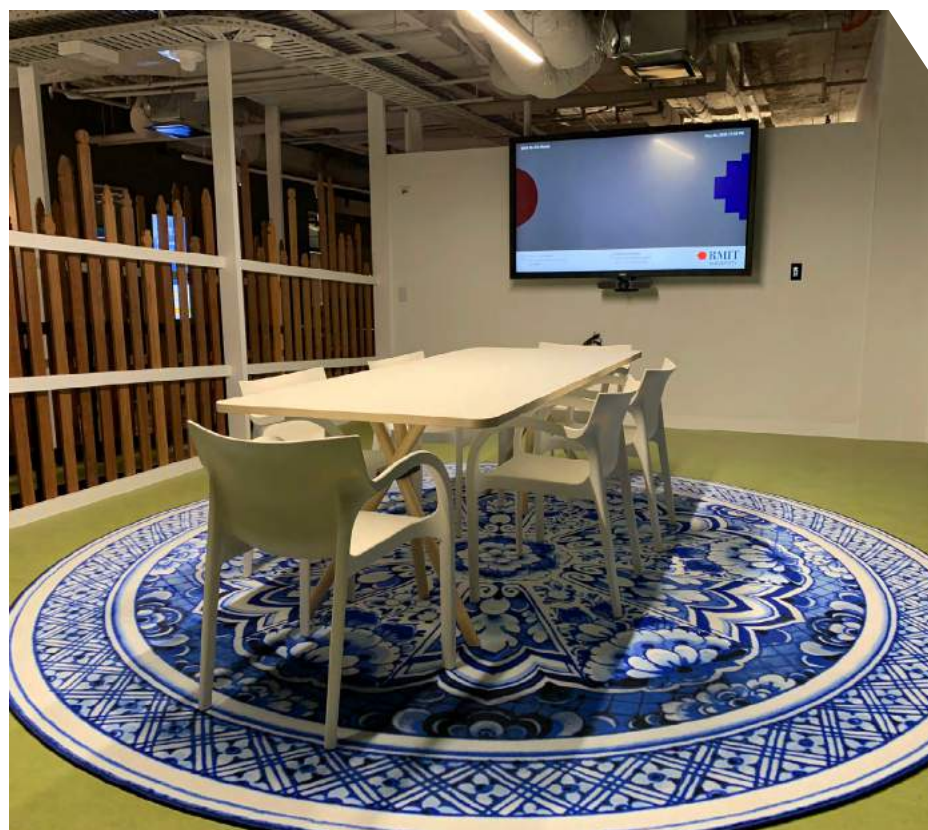
amplifier driving JBL ceiling speakers. Audio capture for VC is handled by Audix ceiling microphones.

The two Multifunction and Training rooms sport AKG and Revolabs wireless microphones, Epson projectors beaming to motorised retractable screens, and Sony PTZ cameras. The audio systems are managed by QSC Q-SYS core 110fs, which drive JBL ceiling speakers via Extron amplification. Extron’s nifty SMP351 is used for session capture, and signal distribution is via Extron’s twisted pair HDMI transceivers/receivers. The rooms can be linked and used for presentations, VC, and distance collaboration. Opening to the atrium, they can also be used for pre-function drinks.

The north-south running Terrace is a collaborative workspace that is totally wired for sound. 25 JBL pendant speakers and 24 JBL wall mount speakers are powered by Extron amps and controlled via a Q-SYS core 110f, which includes input from a Denon network media player. NEC screens through the Terrace can take inputs from the Crestron AirMedia wireless presentation system. An innovative Atlas IED Sound Masking



Crestron TSW-1060



Crestron Flex and more hiding behind the screen



Behind the scenes



Crestron Soundbar in action



Room Booking



Presenter's lectern

Generator is used to send a type of white noise through the space to provide staff with auditory privacy in the open plan environment.

A specialised Training and Meeting room can be taken over by the Critical Incident Management Team at the touch of a button. Its multiple screens can flip over to 'Advanced Mode' enabling multiple video and CCTV sources to be routed to the room and be recorded with time-stamping to create a detailed record of any incident on campus.

Digital signage has been upgraded throughout, with NEC displays powered by Bright Sign networked digital signage connected to the AppSpace digital signage platform. Some screens also incorporate SerraView wayfinding, integrated into the AppSpace signage cards.

**User Experience**

"What we've achieved is a consistent user experience," affirms Manoj Indraharan. "Whether it's a small, medium, or large room, the AV system looks and operates in exactly the same way. There's uniform audio coverage, uniform mic pickup, the cameras are all positioned in the same place in each space, and the room booking system in front of each room is identical."

"Crestron's ability to integrate perfectly with every piece of hardware we're using has made things easy for us," attests Nikesh Kapadia. "We spent months on the user interface design with lots of workshops with Insight, WSP and ourselves. Sam De Grazia from Insight Systems was the control system programmer and he brought a lot of good ideas, like using Crestron gesture control

on the touch panels, including the ability to 'swipe' through lists of TV channels instead of pressing 'next, next, next'; it's great the Crestron system can implement that."

"The Crestron platform really shines in a complicated environment," remarks James Jory. "I've never seen so much time spent on a UI design; Nikesh and Manoj really pushed the boundaries. Our lead programmer Sam De Grazia spent hours with them ensuring the UI would be fantastic for years to come. Crestron's close relationship with RMIT really helped us push what could be achieved. There were weekly questions from us and RMIT about how far we could push a product, and they supported us with demonstration spaces and product ideas which were critical to getting the project finished successfully."

## Ngargee – The Meeting Place

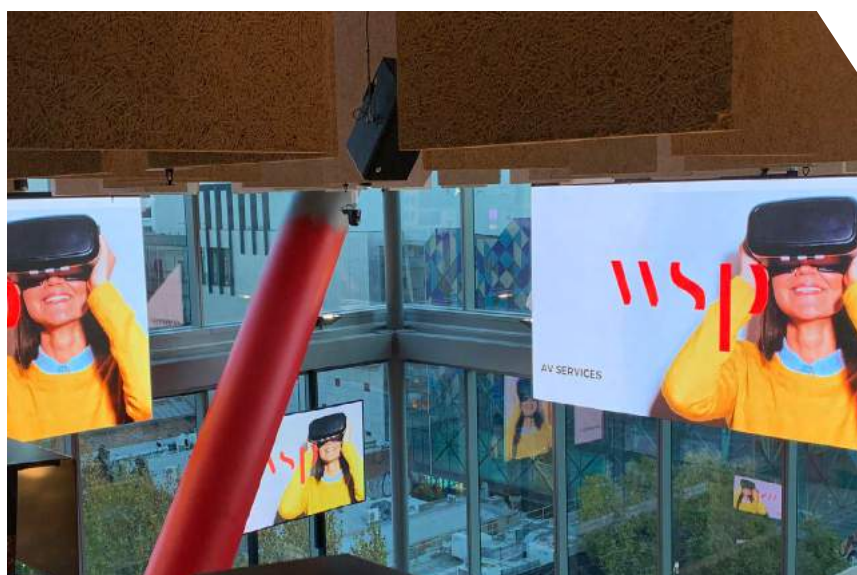
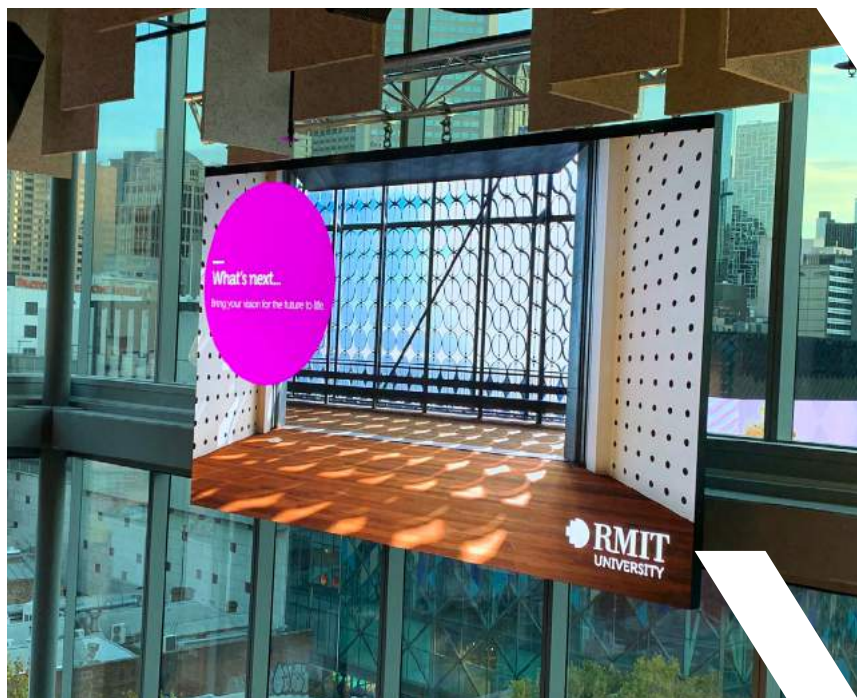
The three-story Ngargee sits in an atrium that was a void under the previous tenancy. Its two enormous 170" NEC LED screens frame a breathtaking view out to the intersection of Melbourne Central and its own three imposing LED signs, exactly as the architect envisioned. It's a town hall and event space that holds around 100 people, and was deliberately designed to be a 'wow' space for the University, fit to host dignitaries and special events.

It's equipped with a Quest amplifier and loudspeaker system fed by a Q-SYS Core 110f, taking inputs from AKG and Revolabs wireless microphones. Sony PTZ cameras focus on presentations, and BrightSign digital signage players activate the huge screens when not being used for events. The sound system was painstakingly modelled and acoustic treatments installed so the PA in use never disrupts those working in nearby spaces. Broadcast tie-lines at the front and rear of the space are available to media.

"We saw Ngargee as an opportunity to do something special," confides Jeremy Hearst. "It wasn't part of the original budget, but we fitted it in, including the creation of the tiered seating and the required AV spec. It's now a resource that can be used Uni-wide, and is bookable. I think the soundproofing is amazing; there are work areas right next to it, and they've done a really good job of keeping them acoustically separate."

"I was physically gobsmacked when I first walked into the space," admits James Jory. "It's a view to die for over Melbourne Central, but I did go in there wondering how we were going to get two 170" NEC LED screens in the air. On paper, it was a big risk, but in the end, the delivery was amazing. From very early on, we were in conversation with head contractor Shape on the engineering side. Shape spent a lot of time coming up with a solution so there's no physical stress on the building. It was uneventful in the end – it's all done with two chain motors on hooks and the screens on truss, but the background detail was everything. The clearances are about 300mm between the big central pole in the space and the screens to get them down for maintenance access. It's an holistic design, with everything well thought out, including support."

James singles out screen provider NEC for particular praise in the face of the unfolding COVID-19 pandemic. "It was all in the timing," recounts James. "We were watching the news out of China over the New Year period knowing we had two custom NEC walls being manufactured there. We made daily calls to follow-up on progress as their delivery was make-or-break for the project. NEC fast-tracked them and put them on a boat barely a week before everything shut down in China. They then flew engineers down to Melbourne for commissioning. RMIT really value these type of partnerships, as they're essential to achieving such big goals."





# Going Off-Grid with Be Productions and JBL

by Jason Allen

**Be Productions, based in Northern Sydney, often find themselves working outdoors. They're open air cinema specialists, and the Australian distributors of German-made AIRSCREEN inflatable screens. They're also known for large scale projections, brand activations, and event management, all of which usually involve being out in the elements.**

And you don't get much more outdoorsy than doing a gig an hour north of Newcastle, near the historic town of Stroud, in a valley called Gunns Gully, where around 500 dirt bike enthusiasts have converged to ride the Transmoto Enduro.

The Transmoto Enduros are a calendar of eight and 12 hour endurance races for amateur riders taking place on dedicated tracks in rural areas all over Australia. Pitched as events where you can 'Race Your Mates', competitors descend on the sites on

Saturday to pitch their tents and prep before challenging each other on the Sunday. As a gig, it's big, it's loud, and comes with all the logistical challenges of being remote at the same time.

"We are no strangers to outdoor events like the Transmoto Enduros," says Marc McAvoy, Director of Be Productions. "For production on these kinds of events, if a piece of gear can have a battery or run wirelessly, it's a plus. That's why we carry 60 different models of battery powered lights!"



With every event on the calendar a sell-out, covering the huge sites with audio for communications, announcements, and the race call is a challenge. "We have the audio coverage in the central operations hub sorted," elaborates Marc. "That's all run with cabled passive speakers, and the Enduros tour a small 25kVA generator to power it all. That area includes management, sponsor tents, a stage, and the finish line. The trickier issue we had was to get audio to the camping area 300 metres away, where they've decided they don't want the constant hum of generators."

As part of their continuing research into battery powered solutions, Be Productions got talking to the audio team at CMI Music & Audio, and had their attention caught by the JBL EON ONE Compact. It's a self-powered two-way, kicking out 112dB SPL, with onboard four channel mixer and processing, Bluetooth capability, app control, and an all-important rechargeable and hot swappable battery with up to 12 hours run time.

"We thought the Enduros would be a great test of the JBL EON ONE Compact as a battery-powered audio solution," relates Marc. "So, we bought six units and an extra



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JBL EON ONE Compact with hotswappable battery



six batteries so we could recharge and hot swap without interruption. We put in an FM transmitter at ops that broadcasts to the whole site, then ran a rechargeable FM radio receiver on three of the EON ONE Compacts at the campsite that charges off the EON's USB port; very handy capability, that. We then hardwire signal to the other EON ONE Compact in each pair via the analogue passthrough."

With the EON ONE Compacts rigged on site in weatherproof bags, the Enduro was up and running. "The charge on the battery was very reliable," observes Marc. "The first day, we were running full whack and didn't have to swap batteries until that evening. We had a tech looking at the on-board battery

indicator every hour, and they were fine. The hot swapping was really the key to success for us, as we could do it quickly and easily without having to de-rig the units. In terms of sound, the speech intelligibility is very good, and they absolutely cut through. For full range programme, the output is very impressive for a battery powered unit. I'm very happy with their coverage, and I'd say the EON ONE Compact is the way forward for us in these applications."

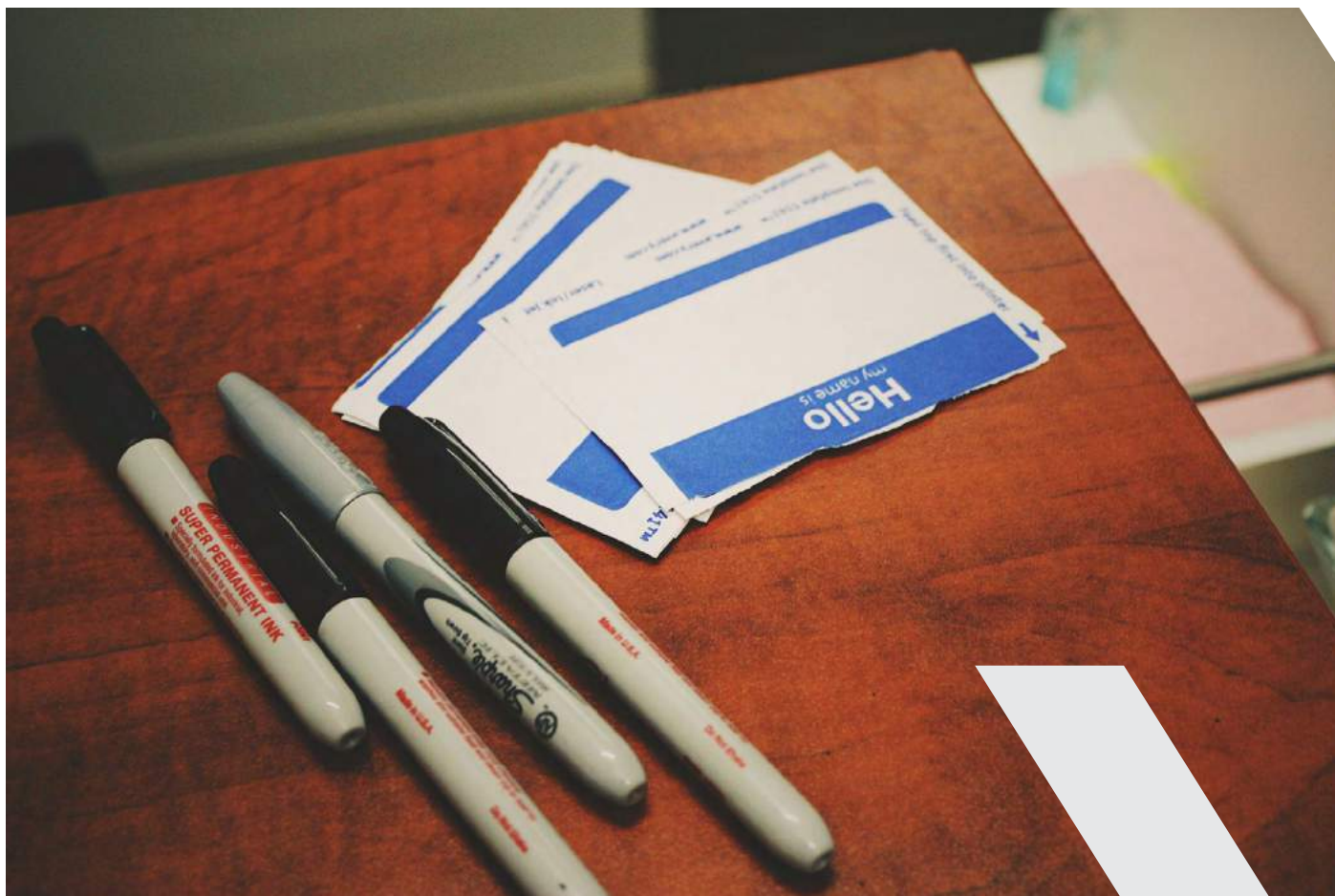
Weighing in at just 8kg and measuring 291 x 255 x 399 mm, the EON ONE Compact's portability and flexibility will likely see it end up running in some unusual applications. Literally.

"I've just been designing and quoting for a running festival with a requirement for runners to be kitted out with a backpack and a speaker," chuckles Marc. "The idea is that they look like the other competitors, but they'll be blasting audio synced via phones, connected to the speakers via Bluetooth, with the JBL EON ONE Compact sitting in the backpack. We've pitched that to the event, and we just hope they don't expect us audio techs to run the half marathon with them!"

[www.beproductions.com.au](http://www.beproductions.com.au)

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# WHAT'S IN A NAME?

by John O'Brien

**Events are colourful affairs. Beyond the flashing lights and screens are some equally variegated people. Nowhere else have I found as many interesting characters as in the live scene. Many are known only by their aliases, AKA. Some of these monikers are the stuff of legend. Some just sound cool, funny, or downright surreal.**

Trekking around gig to gig, production house to truck and from big event to small, it is easy to meet a lot of people. Nicknames are a great way to stay remembered.

The earlier, wilder, days of road life are partly glorified in mythos. Some characters were allegedly a bit shady or on the wrong side of the taxman and a nickname was enough. As long as you got the band on stage, who cared about your birth details? It was still a little loose in the 90s, when I toured a lot.

In today's more professional and regulated environment, it may be a little trickier to sail under the radar, cash in hand, sign X and see ya next time round but there is still call for a memorable handle to be known by.

## Noms de guerre

Let us look at this nomenclature a bit more scientifically. In taxonomy, the formal binomial, Latin or Greek based, genus and species epithet is different to the common

name. Analogically, this is like passport name vs. nickname. So, just as *Phascolarctos Cinereus* is more widely known as a koala, someone like Grant Jennings became GJ.

Following my own categorisation, I'll kick off with some honorifics based on initials, given and surnames usually combined. Initialled gig peeps that I've had the pleasure to know include: GJ, MG, JB, CR, CRB, AJ, BJ, and DB. That last one is difficult to categorise because Dirt Box ain't on Graham's passport. AFG is in a category all of his own. May his inner strength keep him powering on. I went by J.O.B. for a while there but Johnno suits me better these days. One of my local friends calls me John O'Beard, which would nudge into the next section...

...being that of physical features. In this bracket, I've worked and kicked on with: Pineapple, Hairy, Midnight, Bluey and Red (both ginger-tinged), Tiny (x2, neither small), Shades, Fester, 2Cubes and Dread. Less flattering, but worn with pride by all involved, are Tubby, Slim and Big Dave (x2).



Lofty would normally be for a tall person but this one is surname based. Same for Syko but he was unhinged enough to warrant the alternate meaning. RIP Dave. Further plays on surnames I've known in the biz include Weird, Winch, Pav, Kenno, Brains, Millsy, Gibbo, Gouldy, Gildo, Azza, Frecko, Heppy, Risky, Chappo, Holly and Simmo. Given-name-plays start with Aids, Matrix, Wozza and Puke. No doubt there are many more of these.

Some tags have cryptic beginnings, some are a bit descriptive, and many are just odd. For few of the following I know the full backstory, but those that I do are hilarious. For the rest, they are (or were) interesting people with intriguing names: Speedy, Smasher, Slammer, Scooter, \$crooge, Squirter, Spike, Sneaky, Swampy, Stig, Scratchy, Spag, Sol, Scary and Sun-sun make up the S's. Wookie, Motley, Garg, Grungle, Puckoon, Headers, Davros and Duckpond are the odder sounding ones. Multiples include Wal (x3), Doc (x2) and Troggy (x2) but only one worked as a trog. Iggy, Oggy and Plonker did see the LX light. Mumbles, Meltdown, Yahn, Rocket, Grub, Gutter, Banger, Dr Bob, The Funk,

Junior, Wrongway and Zed round out the others. Melbourne crew might remember The Whistling Rice Bubble - entirely appropriate if you ever met him. I never met Bloke but I hear he was top notch. Yogi was before my time, as was one of the Bears.

And there are plenty more animals (by name, if not nature): (the other) Bear, Sheep(ish), Squid (x2, one put me in hospital!), Turtle, Piggy, Weazel, Fish, Cricket, Oysters, and Antman. Like pet owners, some even physically resemble(d) these monikers.

I've often wondered if it is the industry that attracts such outsized characters, or that it just makes them weirder. Maybe it is part of the road life that scars our souls, and leaves names inked like a nominal tattoo, as titular legacies for later folklore.

**Don't call me Dave!**

For some reason, I know a huge number of people birthed David. There are no less than 40 unique Davids (or Daves) in my phone, and I know many more beyond that. In person, I can tell them apart no worries. But share

housing always posed a problem here - messages that "Dave called" were useless without further identifiers. To make it easier for me and everyone else domestically, I started giving them all my own nicknames, ergo: Grumpy, Crazy, Dig, K.I.D.D., Reggy, Dave Mac (now confusingly x2), Vonnies, and Mad-Doc.

We even used to be able to fill the local fire truck with Davids. Now that D. Jammo and D. Thomas have retired from active duty, we now only get Davids Hammo, White, and Joycey.

**Sobriquets for immortality**

Nicknames happen organically but not so corporate re-brands. It is particularly amusing when some over-cooked marketing schmo doesn't do their research properly and misses the cultural misappropriation, a la Pajero.

Outside the gig scene, I've met thousands more people. There have been memorable characters but fewer cool aliases, like: Bernzerk, Pirate, Digger, Slammer, Peppa, G-Dub and Chief. Spud, Ike, Spike, Tige, Shooter and Blaze are locals. Pretty sure that none of them had these titles at birth! Biggsy, Moggsy, Gorba, Shifty, Tojo, Wiggy and Deefar go way back. Trippin' Phil, Bags, Rex Hardware and Blizz came through a housemate. Booger (x3), Slugger (x2) and Tex (x2) are from everywhere. In my family I count: Boggy, Nobby, Poggle, Tikki and Benny (Hill). Statistically though, the proportions of renamed are far lower in the wider world than those I've found hanging around a stage.

As part of event work, you get to cross paths with iconic superstars - many of them also under well-known pseudonyms. These flamboyant folks have duly earned their place in public mythology and their epithets will live on for a long time. With luck, so will those of the often more vivid crew behind them.

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Carol and the Lips, Rosie O'Grady's, Angeles City, Philippines, 1983

# MY 80S GIG IN THE PHILIPPINES

Snippets from the archives of a bygone era  
by Brian Coleman

**Driving into Manila en-route to renew my passport at the Australian Embassy amidst burning vehicles and damaged buildings only days after the 1986 revolution probably wasn't the best decision I'd made during my four year stint working in live music in the Philippines.**

Flashback to 1983, Sydney, where I was tiring of lugging my single 4-way JBL hire rig all over the city and interstate. It was a time when I and other PA owner/operators would load into

pubs where banks of Vespa motor scooters parked outside belonged to Sydneysiders bizarrely trying to emulate the 1960s UK Mod scene. It was a time when punk groups spat

at their audiences and were spat back at, and a time when you took your life into your hands crunching through broken glass and dodging brawling punters during the late-night load out.

A vacation in the Philippines and a chance offer from an American bar owner to outfit his nightclub was my ticket out of the turmoil, I thought. The club was intending to cater for rock 'n' roll hungry young GIs from the neighbouring US Clark Air Force base in Central Luzon.

I sold my PA hire rig holus-bolus, filled a suitcase with PA gear and boarded a flight to Manila. Inside the suitcase was a multicore, a Jands 4-way crossover, two 31 band

## THE GAFFA TAPES

graphic equalisers, a DBX 160 compressor, a Roland RE-301 tape echo, a soldering iron, impedance metre, assorted tools and paraphernalia, and a couple of rolls of gaffa tape.

“Anything to declare?” said the Philippines customs official.

“No.” I only made it about five metres out of customs when I was ordered by a security guard to stop. Pretending not to hear, I kept walking.

“Stop!” was the ensuing terse command. This was my ‘Midnight Express’ moment. Frozen statue-like, clutching my suitcase, I pondered the penalty for smuggling thousands of dollars of undeclared audio equipment into the country. The scowling security guard approached me. “Sir, I have to collect your clearance ticket.” And he snatched the ticket off my suitcase.

After arriving in town, my employer’s partner drove me out to inspect the new venue. I stood staring at a vacant block of land.

“Where’s the nightclub?”

“Oh, we haven’t built it yet, but it won’t be long.”

Sometimes lady luck intervenes, and a rival nightclub had just lost its American entertainment manager, a consequence of his wife noticing an over-abundance of very attractive ladies with a penchant for Americans in the town.

Word circulated about someone bringing rock ‘n’ roll to town, and my employer, embarrassed by not having a club for me to work in, nor the funds to pay me, allowed me to consult to the new club, Rosie O’Grady’s. This was, of course, not an official Rosie O’Grady’s franchise, but hey, this was the Philippines in the 80s, and nobody bothered about trivialities such as trademarks or franchises.

The owner, Ron, an American, had hired a metal rock ‘n’ roll band, and he wanted my opinion before he’d let them open at Rosie’s. So one evening he drove me out to see them perform at the Airman’s Club on the Air Force base. The band was so loud that Ron took two tampons from his Filipina wife’s purse and placed them in his ears, earplugs with strings comically dangling out.

During the deafening

performance, the unkempt lead guitarist placed his guitar on the stage floor and lit it with lighter fluid à la Jimi Hendrix at Woodstock. The flames leapt up threatening to set the stage curtains ablaze.

Needless to say, the band never opened at Rosie’s.

The hub of the rock scene was in Olongapo City, which was the town that catered to the US Naval Base in Subic Bay, home to the US Seventh Fleet. It was located some eighty kilometres south west of the Clark Air Force base.

Olongapo bands were notoriously noisy and undisciplined metal bands that blew everything off stage with lots of echo and reverb, with bad lighting thrown into the mix.

After campaigning heavily for a contemporary band with a female lead singer to open Rosie’s, I got a tip-off about a band playing in Olongapo City.

We found Carol and the Lips playing to a completely empty room in one of the nightclubs. Anything even slightly down the scale from Led Zeppelin, Iron Maiden or Motley Crew was considered ‘variety’ in this town. However, this was the era when female singers were breaking. Singers like Madonna, Cindi Lauper, Pat Benatar, Kim Carnes, Stevie Nicks, Annie Lennox, and Ann and Nancy Wilson of Heart, and many others were making waves.

The idea was to clean up the mess that local bands were making of metal and rock ‘n’ roll and bring it into a more contemporary style of music; and having a female out front worked to quell the egos of the macho metal front-men.

Filipino bands generally don’t own their own stage equipment, so we did a deal with Yamaha. We bought all the guitars, drums,

and guitar amplifiers from them. The guitar amps were Yamaha JX40s.

“We consider those amplifiers toys,” I was informed by the heavy metal pundits, but we mic’d them up with Sure SM57s and they sounded great through the PA.

Local carpenters built our speaker boxes, which were JBL 4560s and W bins, and being faithful to Yamaha we loaded them with their newest range of Yamaha speakers. We even silk-screened the Yamaha logo on the bins, which were powered with Yamaha P2200 amplifiers.

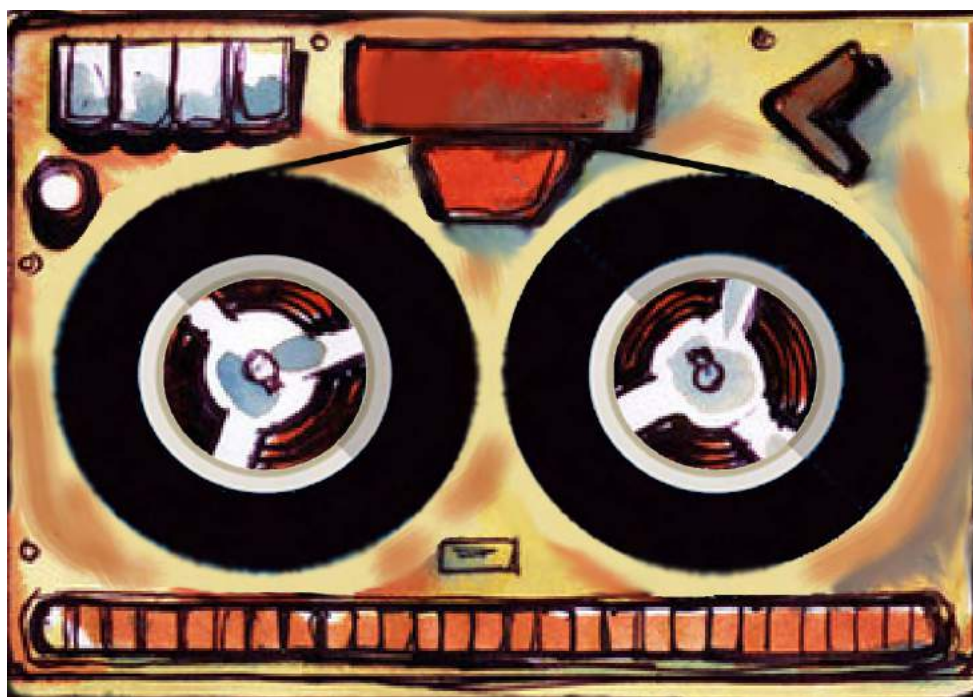
In spite of our deal with Yamaha, the tariffs on music equipment were horrific, so we snuck off to Hong Kong to buy the amps, microphones, a Rosco fog machine and the first 16 channel Soundtracs Omni mixer to hit the market.

Sometimes the Hong Kong salesmen would bring gear into our hotel room. However, when a Rosco fog machine set off the hotel’s smoke alarm we were banned from trading in that fashion.

Once again, the problem was getting the equipment through Philippines customs with their ridiculous tariffs. The owner had a more sophisticated method than my former primitive attempt at smuggling. We had two trolley loads of equipment, and we entered customs via separate aisles. Ron handed me a US one-hundred-dollar bill and said, “Just give them this.” It worked!

In my search for Par 64s, which weren’t used in the country, I made contact with a Filipino technician who introduced me to a local, who had bought all the Par 64s from the 1977 Billy Graham evangelistic tour. I had to drag 16 of them out of a rat-infested cupboard in his garage. Then I asked about Lee blue and magenta gels. “Oh, there’s some of those left in the garbage bins at the Cultural Centre; we don’t use those colours here.”

Carol and the Lips were an instant success, and the club was the place to be for the local GIs for the next three years. In my four year stint I worked for three of the major nightclubs in the town. One club, which rivalled Rosie’s, was sadly the cause of its closure. Foolishly, I returned in an effort to revive Rosie’s. However, it was debt-laden and we soon went belly-up.



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