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- > BROMPTON FOR LED
- > CTRL FOR IPAD
- > ADAMSON CS-SERIES AND MILAN
- > OSC - OPEN SOUND CONTROL
- > HARMAN'S FUTURE VISION
- > PHAROS GOES WEST

### NEWS

Vale Graham  
George 'Cookie'  
Cook

Barkly Regional  
Arts showcased at  
NAIDOC Week

WIN Entertainment  
Centre Makes Its  
Own Work

Meyer Sound  
Reseller Network

Summer Sounds  
Adelaide

### REGULARS

Listen Here:  
Andy Stewart

Jenny Barrett  
covers NZ

Dunc's World by  
Duncan Fry

### ROAD TEST

VuePix Infiled  
Digital Stage

DPA d:facto  
4018 Vocal  
Microphone



# 44S

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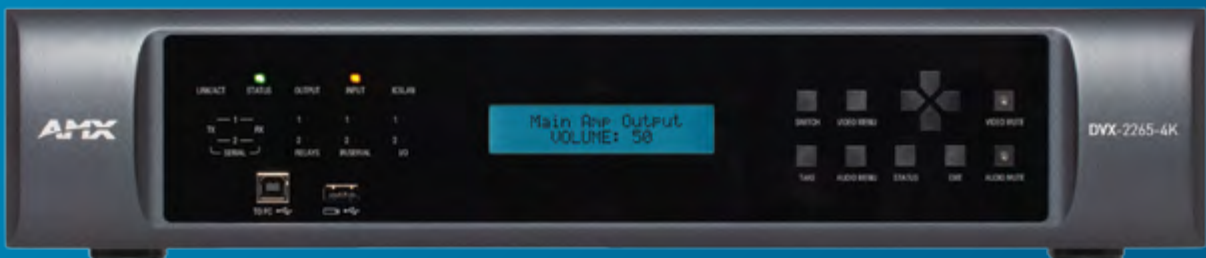
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# CONTENTS

## NEWS

<b>Barkly Regional Arts showcased at NAIDOC Week</b>	4
<b>QSC Australia's Fourth 'More Than A Black Box' Collaboration</b>	5
<b>When the 'Gong Gets Tough – Making Your Own Work</b>	6
<b>Meyer Sound Launches Reseller Network in Aust and NZ</b>	11
<b>Adelaide Revels in Summer Sounds with Novatech</b>	12
<b>Vale Graham George 'Cookie' Cook – Melbourne's Head Mech</b>	15

## NEW GEAR

16

## FEATURES

<b>Puscifer in Acrosanti</b>	21
<b>The Enchanted Garden: High Impact Lighting at Brisbane's Roma Street Parkland</b> by Jason Allen	24
<b>Storms &amp; Salvation Brought to Life for The Flying Dutchman</b>	54
<b>Spacemap Go Expands Creative Palate for Mouse on Mars</b>	57

## THE CONTROL ISSUE

<b>Australian companies embrace the future with Brompton</b>	33
<b>CTRL - Bring Devices Together On Your iPad</b> by Simon Byrne	36
<b>Retro-Active – Monitor City go to MILAN with Adamson CS-Series</b> by Jason Allen	38
<b>Take Control of your Environmental Impact</b> by Jason Allen	41
<b>Total Control</b> by John O'Brien	42
<b>OSC – Open Sound Control</b> by Simon Byrne	45
<b>HARMAN's Vision of Our Control Future</b> by Jason Allen	48
<b>Pharos Goes West</b>	52

## REGULARS

<b>Listen Here: The Search</b> by Andy Stewart	28
<b>Festival of Lights</b> by Jenny Barrett	30
<b>Dunk's World: Phil Spector and the 'Wall-to-Wall' (sic) of Sound</b> by Duncan Fry	65

## ROAD TEST

<b>VuePix Infiled Digital Stage</b> by Helaina Keeley and Aaron Cleland	60
<b>DPA d:facto 4018 Vocal Microphone</b> by Ivan Ordenes	63



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## Barkly Regional Arts showcased at NAIDOC Week

### Is it true that the best things happen by chance? The story of the beautiful hand-painted QSC speakers used at a key NAIDOC Week event in Sydney might convince you of just that!

The first chapter goes back to the Allen & Heath Ampervan on its way to Darwin after delivering musical instruments and audio gear to the Amata Community in South Australia. Technical Audio Group's sales manager James McKenna was at the wheel. "Someone suggested I pay a visit to Jeff McLaughlin at Barkly Regional Arts (BRA) in Tennant Creek," explained James. "So, I did!"

What James found in Tennant Creek was a hub of Indigenous music with the Winanjikari Music and recording studio, performance space and an abundance of musical talent, enthusiastically managed by Jeff McLaughlin, Regie O'Riley, and Dirk Dickenson. James was inspired by what BRA was achieving in the community, and when the team clued him in on some of the issues and limitations they were experiencing with audio hardware he offered to help. Long story short, TAG Cares formed a relationship with BRA and contributed some QSC, Audio-Technica, and Allen & Heath gear to help with their programmes.

Six months later in early 2020, TAG's Director Maxwell Twartz was making his way back from Alice Springs after participating in the project that recorded the Musgrave Band in Amata. "James suggested I take a one-thousand-kilometre side trip to Tennant Creek to see Jeff," said Max. "So, I did!"

As well as being a hub for musicians, BRA's remit is to provide an interface between Indigenous and non-Indigenous cultures and showcase the amazing artistic talent of all genres across the region. All up, BRA represents around 120 visual artists, 300 musicians, 50 traditional dancers and 20 writers. The region encompasses 350,000

square kilometres of the Northern Territory and parts of it are as remote as it gets. Most of BRA's activities are based in Tennant Creek but there are several remote creative sites.

The BRA visual arts programme was coordinated by French national Georges Bureau. As well as conventional media, Georges encouraged the artists to use everyday items as canvases – think car bonnets, exhaust pipes, and guitar bodies. "The guitar bodies in particular triggered an idea for Max and he asked me if we could explore the possibility of commissioning two of our artists to paint speakers," said Georges. "So, I did!"

Heather Anderson and Susie Peterson were both interested in exploring the brief of making two QSC speakers look just as vibrant as they sound. Heather, a Warumungu woman, is one of the Tartukula artists based in Tennant Creek. Susie is from the Alyawarr language group and one of the Epenarra artists based at the very remote settlement of Epenarra. It is best reached by turning east off the Stuart Highway not far from the amazing and culturally significant natural rock formation known as Karlu Karlu (the Devil's Marbles). It's a rough, tough dirt road for 200 kilometres with plenty of dust, potholes and bone rattling corrugations.

Georges had a trip to Epenarra already planned so took a speaker with him. Susie has participated in exhibitions both in Australia and internationally and paints in a very refined landscape dot style with elegant brush strokes. She chose a bush tucker theme for the speaker. Because the perforated nature of the speaker grille was not compatible with her dot painting, she chose to paint all

the other surfaces, which truly brought the speaker into three dimensions, making it more like a sculpture than a canvas. The result is a beautiful depiction of the fruits, nuts and seeds that are freely available in the bush.

Heather was inspired to paint a Barkly regional landscape that wrapped a comprehensive story of the lands around the speaker. It includes an Australian bush scene featuring a kangaroo and a lizard, and a pastoral depiction with cows, fences, water tanks and a drover in a big hat. Spread throughout the landscapes are trees and mountains, some with clouds and rain, and red-dirt roads with folks bumping along in 4WDs.

A world away in inner-city Sydney, at around the same time, TAG Cares was busy helping The Glebe Youth Service (GYS) with a new music programme. GYS is an institution in the inner west and a friendly, comfortable place where kids aged 12-24, many of them Indigenous, can hang out after school or work, and participate in a variety of programmes. From sports to art to food to fashion, there's always something happening at GYS and Michael Coleman, Programme Manager, was keen to add a music production and content creation programme which, via mutual friend and music producer Chris Hamer-Smith, is how TAG Cares got involved.

"TAG Cares provided us with some great audio gear to kick-off the programme including Audio-Technica microphones, headphones and turntables plus some QSC speakers. Oh, and they asked us if we could use two hand painted speakers from Tennant Creek for any of our NAIDOC Week events," said Michael. "So, we did!"

NAIDOC Week is the biggest week on the Indigenous calendar and an opportunity for all Australians to come together to celebrate the rich history, diverse cultures and achievements of Aboriginal and Torres Strait Islander peoples. For 2020 GYS had a full programme of presentations, music performances and community events and the painted speakers were central to much of it. The musicians enjoyed playing through them and many of those attending spent time admiring their beautiful and unique painting. Heather and Susie were delighted to see their work on display in Sydney and, through a humble pair of powered speakers and a sequence of open doors, a line was drawn between Glebe and The Barkly.

Sometimes the best things do happen by chance!

TAG acknowledges the traditional owners of the lands and waters where we work and live. We pay our respects to Elders past and present and we celebrate the stories, culture and traditions of Aboriginal and Torres Strait Islander communities who also work and live on this land.

# QSC Australia Reveal Fourth 'More Than A Black Box' Collaboration

QSC Australia is proud to announce the fourth collaboration in their 'More Than A Black Box' project. The latest instalment in this initiative is a festive coloured set of K10.2 speakers painted by Sydney based artist Sindy Sinn.

"Sindy's work is so immediately recognisable and I feel like you can't walk more than two blocks in Sydney without finding one of his murals," shared QSC Australia's Nicholas Simonsen. "Given his history of working with musicians and bands around the country, it made so much sense to bring him on board with this project and get his signature style on some K.2s."

QSC Australia has already released three of these artist collaborations throughout 2020, featuring the work of Chehehe, Knock, and Haser. Sindy's collab makes the fourth in the series, with more to come very soon.

"Every one of these collaborations has been unique, and the only direction each artist has been given was to make them look as vibrant as they sound," Simonsen commented. "Given



this creative freedom, it has allowed each artist to interpret the idea in their own way, which in turn has made them all come

out so differently. The feedback for every one of these collabs has been so overwhelmingly positive and we're excited for where the project is going to take us next in 2021!"

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# When the 'Gong Gets Tough – Making Your Own Work

by Jason Allen

**As production companies around Australia look down the barrel of another slow calendar, many are doing what artists and performers have always done; creating their own work. Canberra's Elite Event Technology, WIN Entertainment Centre Wollongong, and in-house provider Arena AV have joined forces to do just that, and are coming out on top.**

With the normally packed sporting calendar at WIN Entertainment Centre canned for 2020 and the foreseeable future, Sean Keaveny of Arena AV found himself with an empty venue, no gigs, and a lighting rig and giant LED screen sitting idle. Darren Russell,

Owner and MD of Elite Event Technology, had a warehouse full of concert PA and staff twiddling their thumbs. Having worked together closely for years, the two hatched a plan.

"With the venue just sitting there dark, and

with no need for changeovers from sport to concert mode, we came up with the idea to just set the venue up in a default concert mode and leave it like that," outlines Darren Russell. "The venue came to the party with room hire, and Sean and I put together a production package we're both offering very reasonably, all with the goal to attract some gigs. We've formed a partnership, and we're happy to report, it's working."

WIN Entertainment Centre normally accommodates 4,850 in concert mode, but COVID restrictions meant capacity was lowered – but still at a respectable number for promoters. The venue has COVID-safe accreditation in place, meaning it's easier for promoters to organise gigs without having to jump through COVID hoops themselves. The house rig is set to cover full concert mode so it can adapt to increased patronage without additional equipment having to be added.

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**“Local band The Vanns were the perfect choice to showcase the venue.”**



**If You Build It...**

With an in-house video, lighting, and audio rig in place, the next logical step was to bring in potential customers to see what it could do. Local band The Vanns were the perfect choice to showcase the venue. “The Vanns drummer Andrew Banovich works for Sean at Arena AV when not out with the band,” relates Darren. “They were in a very similar situation to us; they are an up-and-coming band, they’d won JJJ Unearthed, done a Like A Version for JJJ, and their career was rocketing ahead. Then along came COVID.

They were very keen to support this idea, and put together a three song showcase for us.”

The partnership invited serious concert promoters to come along and watch the showcase with the venue in its new default mode. “We sat them down and went through all the details,” retells Darren. “Price, capacity, average ticket price, box office, costs, take-home. The numbers are all quite feasible for reasonable sized gigs. They saw it, heard it, and got a feel for the vibe. We also got a video production company to shoot the showcase for a promo package.”

## WIN Entertainment Centre – The Production Package

**Sound**

- PA L/R – d&b audiotechnik GSL
- PA Sidefill - d&b audiotechnik V-Series
- Subs - d&b audiotechnik SL-SUB
- Front Fill - d&b audiotechnik V7P
- FOH Console - Digidesign Profile
- Monitor Console - Digidesign SC48
- 12x d&b audiotechnik M4 monitor wedges plus 2x d&b audiotechnik V-SUB
- Full mic and stand kit, including wireless mics.

**Lighting**

- 8x Chauvet Maverick MK2 Profile
- 24x HEX 18 LED
- 8x Martin MH7 hybrid moving light
- 12x Chauvet Maverick MK2 LED Wash
- 24x Chauvet Maverick MK1 Hybrid Wash
- 12x Chauvet Maverick MK3 LED Wash
- 4x Chauvet Strike4 LED Blinder
- 1x Robe 400ft Hazer Oil Based
- 2x Unique 2 DMX Hazer Machine
- Lighting console: GrandMA Lite
- Media Server: ArKaos

**Video**

- 264x Dicolor LED A-391 500mm x 500mm 11m x 6m
- 2x Novastar J6 Multi Processor
- 2x Novastar Fiber Convertors

**Staff**

- FOH Audio Technician
- Monitor Technician
- Lighting Technician
- Stage Technician

**Backline available on request**

**Upgrade consoles and floor packages available on request**

**Video Camera packages available on request**

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# NEWS

It worked. Through December 2020, the new set-up hosted gigs including Empire Touring's 'Hot Summer Nights', featuring Richard Clapton, The Radiators, Thirsty Merc, Dragon, Choirboys, and Wendy Matthews. The default rig has also been used for some corporate work including a business awards night and a large school end-of-year function.

Before the NSW COVID interruption in January, negotiations were underway for more concerts and some stand-up comedy.

"It's been a bit of a punt, but we are making it work," concludes Darren. "We saw an opportunity to create work during this difficult time, and we've given it a go. We're all discounting and giving away a few add-ons, but it's all about coming together, keeping busy, and still making a couple of bucks to keep us all going."



Richard Clapton



Choirboys



Wendy Matthews



Dragon



Thirsty Merc



The Radiators

# Meyer Sound Launches Reseller Network in Australia and New Zealand

**Meyer Sound has launched a direct, non-exclusive reseller network for the sales and marketing of its loudspeaker solutions in Australia and New Zealand. The new business model allows for greater factory-direct support to Meyer Sound customers.**

“Audio Brands Australia has been a fantastic partner and has helped us grow Meyer Sound’s brand awareness over the past three years,” said John McMahon, senior vice president. “Learnings from the pandemic suggest that moving to a more direct model will benefit customers in this important market.”

Over the decades, Meyer Sound products and technologies have earned widespread

acceptance in Australia and New Zealand, with a number of cutting-edge systems installed in recent years. Examples include Telstra Theatre Melbourne, Australian Outback Spectacular, and Townsville Civic Theatre. Two sizeable projects in progress right now include Cairns Convention Centre and Sydney Theatre Company with an all new Spacemap Go system.

“In three years of working with the factory,

Audio Brands has delivered a number of key projects throughout Australia and New Zealand. We are very proud of what we achieved and have enjoyed working with the Meyer Sound team. We wish them well with their new direction,” says Don McConnell, founder and director of Audio Brands Australia.

As the new reseller network comes online over the coming months in Australia and New Zealand, Meyer Sound looks forward to a bright future with new opportunities across all vertical markets.

The territory is managed by Meyer Sound Sales Manager, Asia Pacific Chris D’bais. To support the market, Meyer Sound is currently seeking to fill the role of Sales Manager, Australia and New Zealand.

For more information, contact Chris D’bais at [chrisd@meyersound.com](mailto:chrisd@meyersound.com).

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 MCTRL660 PRO 1080p <1ms Latency

A8s / A10s Plus 1 frame Latency

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Product name	Latency	Loading ability
NovaPro UHD Jr	2 frame latency	4096x2160@60Hz
MCTRL4K	<1ms latency	4096x2160@60Hz
MCTRL660 Pro	<1ms latency	1920x1200@60Hz

EXPERIENCE THE BEST



# Adelaide Revels in Summer Sounds with Novatech

by Jason Allen

**Summer Sounds in Adelaide's Tulya Wodli (Bonython Park) was Australia's first month-long, financially independent, and COVID-safe outdoor music festival. A shining example of the way forward for the industry as a whole, promoters Five Four Entertainment, Groove Events, and Secret Sounds partnered with Novatech Creative Event Technology and Nexstage to bring a diverse programme including Bernard Fanning, Groove Terminator, Ball Park Music, Ruel, and Lime Cordiale to a 2,100 capacity audience sustainably over 18 shows.**

With the audience corralled in 'Party Pods' suitable for four to six people, punters could choose from VIP, Gold, Silver, or Bronze seating packages. A VIP Pod got you a place

in the first five rows, your own toilet block, faster drink service, and a choice of premium drinks.



"The Party Pod system is fantastic," relates Novatech's Managing Director Leko Novakovic. "While some people were apprehensive about being 'penned in', all doubts were removed after the first weekend. About 80% of the feedback we've heard is that this is the way all festivals should be staged from now on, COVID or not. Most people want comfort and luxury, and to be able sit down. The VIP and Gold sections are really nice, with their white picket fencing and vines, and everyone has tables and chairs. The Silver and Bronze pods that are further back are on raised decks, so everyone has good sight lines. Audiences need to experience this system for the first time to appreciate how great it is."

With the crowd much more static than a traditional festival, Novatech put a lot of extra care into the sound design, ensuring every seat in the house has even coverage. The main L-Acoustics PA of 12 K2 line array elements and eight SB28 subs per side was augmented by four L-Acoustics Kara elements as front fill, and a brace of L-Acoustics Syva and Syva Subs rigged on Party Pods at



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the rears as delays, ensuring not only great coverage up the back, but a clean look and clear sightlines.

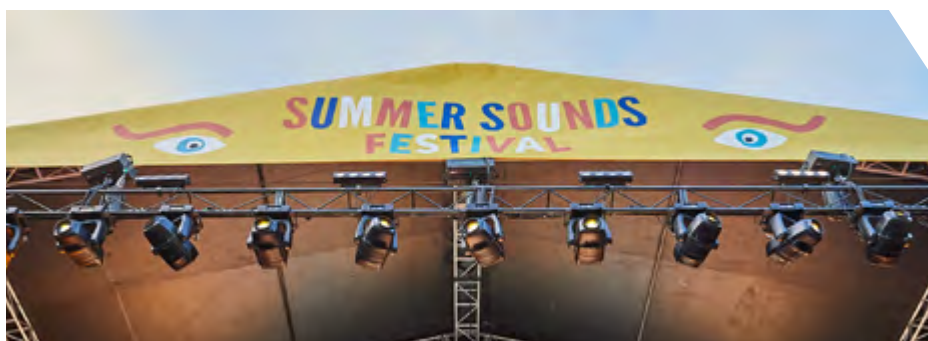
Audio control was courtesy of an Avid S6L-32D out front and an Avid Profile on monitors. On stage, 10 L-Acoustics X15 HIQ wedges provided foldback, with two L-Acoustics SB18 subs on hand to shake the bottom end.

Lighting was an extensive package ensuring that any visiting artist wouldn't need to add extras or floor packages. The festival-sized rig included Martin Atomic 3000s, GLP Impression X4s, Martin Mac Vipers, Claypaky Sharpy PLUS, ProLights ARENACOB4FC blinders, and Hungaroflash T-Light Strobes, all controlled from a Martin Lighting grandMA2 full-size.

As Novatech worked closely with the promoters on the stage design, they were able to incorporate scrims on either side of the stage that not only hid the main PA, but also framed the huge LED IMAG screens that flanked it, making for a professional and clean stage look. The left and right IMAG screens were 3.6 by 6 metres, made of ROE CB5 5.77mm pitch panels. The upstage LED wall was 8.4 by 4.8 metres, utilising the same panels. All screens were powered by Brompton SX40 processing and connected via Brompton Tessera XD fibre optic data distribution. Live IMAG vision was captured with six HD cameras running through a Ross Carbonite switching system.

Summer Sounds would not have been the raging success it was without the full support

of SA Health and Chief Public Health Office Professor Nicola Spurrier. "We've taken to calling her Saint Nicola," jokes Leko. "SA Health have been incredibly supportive. Professor Spurrier came down to see the festival herself and loved how it was planned and executed. SA Health granted special exemptions for artists like Bernard Fanning to travel in from NSW, and gave exemptions covering the rest of the festival. Bernard gave Professor Spurrier a shoutout during his set, and we even had South Australian Premier Steven Marshall talking about Summer Sounds at his media conferences, drumming up support."



# Vale Graham George 'Cookie' Cook – Melbourne's Head Mech

By Andy Moore

Gee Gee, Cookie, or Graham George; the name you knew him by dated when you fell under his spell. To others, it's when you came into his life, or when he came in to save yours. The Master Of Second Chances, he'd been given so many growing up, the one he gave you was his way of undoing his wrong. By making it right, you got the benefit from his big heart. Because of his street instincts and his smarts, he'd throw up his hands to say "Trust me, I got this. The kid's got some good things to offer. He brings a lot of bad things from along the way so old and deep the weight of them would drag him down by the shoulders."

He fended of his attacker with a joke. He could make a laugh out of nothing at the drop of a hat. When you reminisce down the track you laugh still as hard, but the belly aches from laughter hurt even more now you're older. There's so many laughing-out-louds, you forget the funniest.

The best one of mine is The Princess Theatre Stage Lift. A no-no after the half-hour call. But it's only 24 minutes to Beginners and we have to be up in the Proscenium by then. So taking it to the top to be near the Stars is the logic behind your bending of your mantras. You get in with your mentor because you feel safe by his side, but by then it's too late. The unexpected attack while the rats run into your jolted, numbed mind become a giant leap back where the push and shove struggles are pushed down deep into the 'can't deal with' area because the next laugh is coming now. Cookie pressed the alarm bell for help twice but only enough to make it go DING DING, and then plunged us all completely into darkness. He started to swing his fists around

faster and faster 'til they'd connect. A barrage of punches were flying blindly, as were the laughs, the oos, then the bigger laughs, until a random floor punched in the darkness opens and delivers all the belly aches, happy tears, and one giant "SHHHOOOSH!" from an ASM to jolt you back into Show Mode. That's the Cookie I remember.

137 were his quaddie numbers, and in my as is everyone's eras, they were shit and never won for him. Well, not in my timeline anyways. Those that know me will always back me on this red hot tip; I couldn't tip a sick girl off a dunny seat. But I'm tipping and putting the house on it; 137 never ever won in yours either. Did he care or listen? He saw it, and boy did he hear about it every week, but he never ever gave up on hope, nor on the 137 that had been there his entire life.

I hope he now finds his peace knowing that he never gave up on hope. His only reason was to live, love and to protect, and that also brought him death, hurt, and hate. But that is the full circle of life. You pick the bits that are the most memorable and important to you. Cookie knew well the consequences of mixing just the right amount of stretched boundaries with 'not broken but bent'. It was always just enough to strengthen his reasoning for the lesson. He would never push you the wrong way, but he wouldn't stop you when you chose the wrong path either. He allowed you to see for yourself and make your own mind up. When it became too hard to do that, the logical way he stepped in, pointing you in the right direction, was all because he had made so many moves back in the right direction after taking so many wrong turns and hitting roadblocks.

The bumper sticker on his Holden Wagon said



Graham George 'Cookie' Cook  
13 December 1958 - 10 January 2021

it all: GET IN, SIT DOWN, SHUT UP, HOLD ON.

137 says it all about Cookie. Now you can see what else they really mean, and what his name was to you. You can now see more dots connected, and how much closer we really are to each other because of him. Here's my start from all the scattered, jumbled stories I've heard over and over a 15-day straight period that has made me confused, tired, and very old.

13 day of birth.  $3 + 7 = 10$  day of death

1 - Love is unconditional, Nana Cook his favourite

No. 1 love Kay, always and unconditional

3 - Most important reason for Hope: Kay, Dale, Dean

7 - Gordo, Enid, Lynette, David, Barbara, Graham, and Jenny

Full circle it goes around, only you can see when it's time to stop spinning. But by then it's too late. Put your hand out and you will see it won't destroy all the problems, and will only clear some of the little ones away. But it's a start able to be taken and ends when it ends. Only you know what's right, but the others will know what's best.

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# NEW GEAR



## Apogee Symphony Desktop

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## Epson LightScene EV-110 and EV-115

EV-110 and EV-115 accent lighting 3LCD projectors are Bluetooth-enabled, and feature motion sensing capabilities and a brighter laser light engine with up to 20,000 hours of virtually maintenance-free operation. Offering an industrial design that blends discreetly into any setting, LightScene offers a sleek black or white spotlight shape with an array of configuration, mounting and programming options. Additionally, the new models feature Epson's Creative Content Projection app with preloaded content that can be customised by touch and built-in software that enables easy-to-use display management.

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



## Avonic PTZ Control Devices

The CON100 is a simple joystick RS232 controller that can control up to 255 cameras and use up to 255 presets. Every setting of the camera can be controlled by accessing the OSD of the camera through the controller, directly controlling the camera's Pan, Tilt, Zoom and Focus. Switch easily between manual and auto focus, save and load presets, and connect multiple cameras to multiple controllers.

The CON300-IP is an advanced IP joystick controller able to control up to 255 cameras and up to 10 presets per camera. It delivers direct control over Pan, Tilt, Zoom, PTZ speed, focus, iris, brightness, white balance and R/B colour correction can be controlled easily. Access all other settings of the camera easily through the OSD of the camera using the controller. With added IP functionality, the CON300-IP is a true hybrid solution for new and existing installations.

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



## Barix Barionet Automation and IO controllers

Barix automation devices are designed in Switzerland and are the established standard for control, security and monitoring applications. The Barionet product line covers a wide range of automation applications for machine control, temperature monitoring, door-light steering, alarms, and more. Barionet products are adaptable to suit many applications and can be programmed with a simple scripting language via Barix BCL or Lua. Programming allows the configuration of hardware interfaces like network, I/O, relay, temperature sensors, Wiegand, Serial and 1-wire. On the control side HTTP/CGI, UDP, TCP, SNMP and Modbus/TCP are supported, other protocols can be utilised depending on the application.

**Australia: Amber Technology [www.ambertech.com.au](http://www.ambertech.com.au) or 1800 251 367**  
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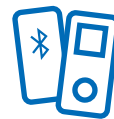
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### PROLiGHTS ECL FW Ellipsoidal

The EclProfile FW is a high-quality full white LED profile, in tungsten (3,200-kelvin) and daylight (5,600-kelvin) variants. The unit has been engineered in the same housing and optical design as the EclProfile CT+ fixtures, launched last October. However, the FW series were conceived with higher-brightness and quality on a specific white point, with LED sources selected to achieve the finest quality of whites, scoring over 97 CRI, as well as very high on R9 and TM30 values. The EclProfile range has a broad range of lens barrels available, with fixed or zoom high-definition, anti-reflection lenses for different applications, and also accepts third-party accessories.

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



### Neets Control Devices

Neets is a Scandinavian company that develops intuitive, user friendly and good-looking control solutions for meeting spaces of all shapes and sizes. The Neets range of IP/RS232 Keypads can be used to control a growing library of 4,750 different devices. For the evolving COVID-safe world, Neets offer an anti-germ, nano-silver screen protector which is available for all Neets touch screens (10", 7" and 4"). At the top of the range, AiFa II is a rack mounted controller providing easy control of all room functions, enabling touch control with a tablet (iOS or Android) supporting custom GUI design.

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[www.ambertech.com.au](http://www.ambertech.com.au) or 1800 251 367  
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[www.amber.co.nz](http://www.amber.co.nz) or +64 (0)9 443 0753



### Strand Neo Compact 10 Console

A powerful, full-featured lighting console with standard 4 x DMX universes (max 10 x DMX Universes), in a small form factor, with rack mount options. Internal 7" touch screen and ability to connect external touch screen, 10 x user defined faders across 10 virtual pages, 7 x effect engines and pixel mapping capabilities. Mature connection ability with 1 x DMX in, 2 x DMX outputs, Ethernet, HDMI and 5 x USB ports.

**Australia: Tecart**  
[www.tecart.com.au](http://www.tecart.com.au) or 0419 133 342

### Infinity Chimp USB Dongle

The Infinity Chimp OnPC Dongle enables your Infinity Chimp OnPC software to output 1024 channels over two DMX universes. No extra power supplies are needed as the dongle is powered by the USB input. With the available DMX 5-pin output connector on the Infinity Chimp OnPC dongle, it is possible to distribute the first DMX universe by traditional cable to control your lighting fixtures. Two universes are also available as Art-Net and sACN. This enables you to use any visualisation software, allowing pre-programing and refining of your show from a computer.

**Australia: Clearlight Shows** [www.clearlight.com.au](http://www.clearlight.com.au) (03) 9553 1688  
**New Zealand: Kenderdine Electrical** [kelpls.co.nz](http://kelpls.co.nz) or (09) 302 4100



### GLP Streamer

Responding to the current trend for streaming and videoconferencing, necessitated by the coronavirus pandemic and social lockdown, GLP has designed Streamer. This is a small, versatile LED light source whose sole purpose is to present hosts, interviewees and collaborators in professional, studio-type lighting with the ability to be fully remote controlled by a lighting designer, if required. UL-listed, the spec includes flicker-free high intensity output, with a colour temperature range of 1900-5600K, provided by three different colour sets of LEDs.

**Australia: Showtools**  
[www.showtools.com.au](http://www.showtools.com.au) or (02) 4646 1199  
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# NEW GEAR



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# NEW GEAR

## Xilica Solaro QR1

Xilica Solaro QR1 is the only micro-format, configurable digital signal processor that enables significant cost savings by matching product features to application requirements while also allowing for flexible mounting scenarios. Coming in a quarter rack chassis with PoE, the QR1 is easily surface-mountable behind a display or under a table. With a powerful dual core processor, built-in 4x4 Dante/AES67 audio, and license-activated HearClear AEC, the Xilica Solaro QR1 is a perfect audio enhancement to meeting rooms and classrooms using Unified Communications (UC) applications such as Microsoft Teams, Zoom, Cisco WebEx or Google Hangouts. The Solaro QR1 can be controlled via Ethernet using Xilica XTouch50 and XTouch 80 capacitive touch controls, Xilica Lucia networked wall panels, or with any third-party control system including Crestron and AMX.

**Australia: Amber Technology**  
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 or 1800 251 367  
**New Zealand:**  
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## Shure MV7

The MV7 is Shure's first hybrid XLR/USB microphone designed to address the increasing demand for audio streaming and recording solutions at home and in the studio. Ideal for both entry-level and experienced creators, the MV7's intuitive design makes it incredibly user friendly and simple to set up and control. Shure's Voice Isolation Technology ensures the microphone's pick-up pattern focuses solely on the vocals. Auto Level Mode sets gains perfectly in real time, so the output levels stay consistent. An integrated touch panel optimises control for quick, convenient adjustments. With just a few taps, the touch panel control lets the user adjust the gain, headphone volume, monitor mix, and mute/unmute, with an option to lock customised settings.

**Australia: Jands**  
[www.jands.com.au](http://www.jands.com.au) or (02) 9582 0909  
**New Zealand: NSL**  
[www.nsl.co.nz](http://www.nsl.co.nz) or (09) 913 6212



## TourPro Lighting Soft Panel 300TW and 300DW

TourPro Lighting's Soft Panel 300TW is a fully self-contained, full colour spectrum 6-in-1 LED Soft Light. Optimised for the white requirements of film and TV, the 300TW fixture produces a high output, even wash achieving a CRI of 95 and CCT adjustment from 2000k - 1000k. The Soft Panel 300DW, is a fully self-contained white LED Soft Light. Optimised for the requirements of film and TV, the 300DW fixture produces a high output, even wash achieving a CRI of 95 and CCT adjustment from 3000k - 5700k.

**Australia: Showtools**  
[www.showtools.com.au](http://www.showtools.com.au)  
 or 02 4646 1199

## Zero88 ZerOS Wing

ZerOS Wing can be added onto any ZerOS console or used with Phantom ZerOS, the offline PC editor, to increase the number of channel playback faders available. The ZerOS Wing has been designed to be simple to setup and use. There are no settings, no configuration and no difficult connections. Just plug in via USB to any ZerOS console and the wing is instantly ready to go. A single button switches quickly between 'Channels' and 'Playbacks' at any time, and the 'Page Up' and 'Page Down' buttons are used to either switch between all patched channels on the console, or each page of playbacks. When multiple Wings are used, simply setup each Wing onto a different page. Programmers and operators will find the Wing a very handy tool, providing more control options to best use the faders on the FLX and FLX S range of lighting consoles.

**Australia: Clearlight Shows**  
[www.clearlight.com.au](http://www.clearlight.com.au) or (03) 9553 1688  
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[www.theatrelight.co.nz](http://www.theatrelight.co.nz) or 09 622 1187



## QSC AD-S5T

QSC's AD-S5T is a 5.25" two-way loudspeaker system that offers integrators a premium option for a wide variety of foreground and background sound reinforcement applications where performance, coverage and aesthetics are paramount. To ease installation, the AD-S5T includes the X-Mount system, which enables the loudspeaker to be aimed and installed at a variety of precise, repeatable angles without slipping over time. It's available in black (RAL9011) or white (RAL9010) and housed in a rugged ABS enclosure to easily withstand the harshest elements. The AcousticDesign Series includes a wide variety of sizes and enclosure types. In addition, by utilising native Q-SYS network amplifiers, integrators can take advantage of Intrinsic Correction, a proprietary voicing algorithm for QSC loudspeakers, which helps to further reduce the setup time and tuning process.

**Australia: TAG** [www.tag.com.au](http://www.tag.com.au) or (02) 9519 0900  
**New Zealand: NSL** [www.nsl.co.nz](http://www.nsl.co.nz) or (09) 913 6212





# Puscifer in Arcosanti

**The arid, exquisitely cinematic beauty of the Arizona desert and the paranormal charm of the Arcosanti community united for the staging of “Existential Reckoning”, an ambitious and extraordinary site-specific streamed concert of the new album by ‘supergroup’ Puscifer initiated by Maynard James Keenan.**

For all the incredible works we are seeing created with VR, XR and AR, there is nothing to beat the ethereal heartbeat of nature and the concept of experimental living as a surround environment.

Lighting designer Sarah Landau was thrilled and intrigued to be asked to light the concert livestream, having been fascinated with the idea of Arcosanti for some time but not yet visited. Sarah has worked with Puscifer since

2016 and lights A Perfect Circle, another of Keenan’s cerebral and highly creative music projects. Keenan lives about an hour’s drive away from Arcosanti, the ‘arcological’ postulation of Italian American architect Paolo Soleri, designed to connect architecture and ecology as a philosophical base for democratic society.

The album backstory involves an alien landing on earth and trying to assimilate. As Keenan

declares in the mysterious concert movie trailer, Arcosanti would be a perfect place to achieve this goal! The settlement itself is made from the materials of the desert with the first structures built in 1970 and the community still ‘under development’.

The “Existential Reckoning” video shoot was directed by Adam Rothlein of Ghost Atomic Pictures together with the band’s manager Dino Paredes, and took place in three different locations around Arcosanti – the central amphitheatre, the vaults (two large barrel-shaped structures above ground), and in the desert overlooking a canyon and the Arcosanti buildings.

The set was designed by Mat Mitchell, guitarist, and producer of the album, who also mixed audio for the stream. He presented the overall concept to Sarah when they first discussed the project in early August.

The scaffolding and trussing set structures also provided anchor points and positions for both lighting and video elements.



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A key to the show's ambience was the visual and sonic flow from one location to the next, ending with a spectacular sunrise. The different positions of the vocalists and evolution of camera shots was also fundamental to the narrative, which started with close-ups and lots of shadows and visual trickery, gradually revealing more of the stunning landscape, location, architecture, and context, as the album progressed.

Lighting was left entirely up to Sarah's vision and interpretation, and the six cameras then had their shots adapted and positioned according to her lighting layout.

Once the initial lighting renders received the green light, she started collaborating closely with Mat and his colleagues who were producing the video playback content. They shared rough drafts of the materials being prepared for each song, which in turn inspired some of the colours, textures, mood, and lighting cues of the piece.

The colours were then further refined and optimised for the medium-resolution mesh screen product and discussions shifted to specific accent and focus points.

A week of band rehearsals in Burbank allowed Sarah to pre-vis intensively, which was followed by five days of technical rehearsals with the full rig set up at the Yavapai College Performing Arts Center in Prescott, Arizona, where they finessed the interplay between lighting and playback video.

For sites one and two, the desert and the barrel vaults, an industrial scaffolding tower was in the centre of the action with 12ft wide by 8ft high video panels emanating from the four corners, splitting the playing area into quadrants, each of which was completed with a stand-alone vertical trussing tower several metres further back.

Lights were rigged on the centre scaffolding, on the four trussing towers and at the ends of the video panels with additional fixtures on the floor.

For site three, the amphitheatre, sections of video screen were deployed in the tiered seating and acted as a backdrop while the band faced upstage.

At site one, four Robe MegaPointes were positioned at the edges of the performance space at 3, 6, 9 and 12 o'clock and four feet back from these were another four, one on top of each of the trussing towers.

In the barrel vaults, only the Robe MegaPointes on the truss towers were used, while in the amphitheatre location, all eight MegaPointes were sat on flightcases behind the band in the venue's pit area, in front of what would normally be the downstage edge of the stage.

Four of the eight Robe PixelPATTs in sites one and two were also rigged on the vertical truss towers, with the other four on the centre scaffolding structure facing into the four

quadrants where the band members were playing.

The MegaPointes were used for piercing beams blasting into the night sky "when the wind gods permitted the fog to hang," elucidated Sarah, or for shooting across the performance space creating bold symmetrical patterns that looked very cool for the drone shots!

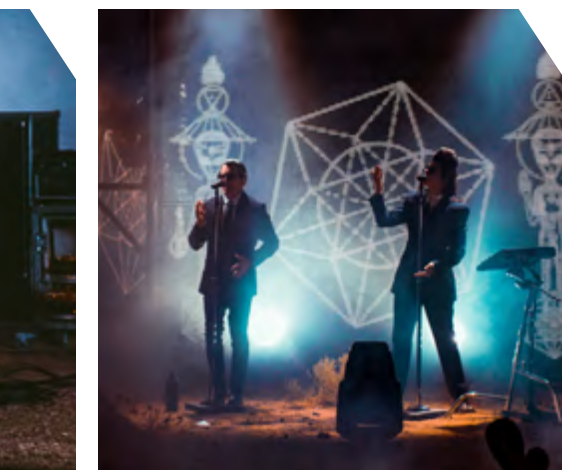
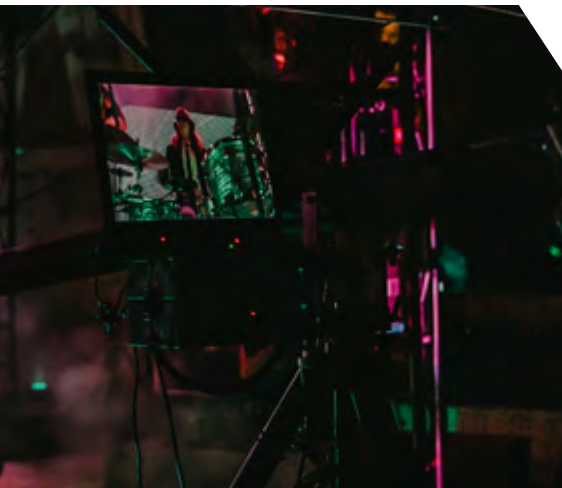
The PixelPATTs were utilised for eye-candy effects, filling the back-of-camera space with colours, textures, and visual impressions harmonious with the video content.

Sarah has used MegaPointes in several previous designs and knew they would be "reliably bright, fast, and easily stretch infinitely into the sky".

The PixelPATTs were suggested by Ryan Knutson at Thornton, Colorado-based Brown Note Productions, who delivered sound, lighting, and video.

Sarah had never used them before and initially ordered four. However, when she saw the fixtures in action and the effects they could produce, another four were requested and hastily driven out to site!

"They were a perfect fit with the retro sci-fi ambience and sacred geometric vibes of the album art and video content," she stated, also pleasantly surprised at their light weight and durability. "They're definitely coming on the upcoming tour!"



**“During the days they contended with 100 degrees plus desert heat and searing sun, and during the nights rattlesnakes and scorpions kept everyone company.”**

Eight Elation Proteus Maximus LED Profile moving heads were used as key/front lights from trusses outside the playing circle in the vaults and desert, while four floor-positioned units worked as low sidelights in the amphitheatre. Landau said she “required lights that would stay bright even in very saturated colours, and that had precise rotatable shutters to minimise spill.”

Some 42 Proteus Rayzor 760 LED wash moving heads were the main workhorses of the rig, used for backlight and eye candy. The fixtures were positioned on the floor in rows up the amphitheatre’s seats with five used as individual floor backlights for band members. In the vaults and desert, Rayzor fixtures hung from the scaffolding and truss and also served as band floor backlights. “The Rayzors sold me with their sparkle LED element, as well as the 360-degree pan and tilt,” she states and says the look of the song ‘A Singularity’ was built to showcase the Rayzor’s unique SparkLED background sparkle system. “I matched the palettes of all the other fixtures and the video content to the SparkLED’s CTO, and used a breakup gobo for key light with the Maximus fixtures. The twinkling of the SparkLED, glittering video content, and rotating gobos made it my favourite look of the show -cohesive, simple, and classy.”

Twelve Elation SixPar 100 IP LED lights were used as uplights for the arches in the vaults, and for the buildings in the distance in the

desert. Six tiny battery-powered Elation Volt Q5E LED wash lights provided uplighting for trees in the vaults, and for the low brush and bushes in the desert. “The Volts were helpful for flexibility and changing placements without having to worry about cabling,” Landau said.

The Elation IP-rated luminaires were outside in the dust and extreme heat of the Arizona desert for three days yet Landau reports there were “zero problems” on site and that “nothing needed switching out or repairing.” She is grateful to Ryan Knutson at Brown Note Productions for suggesting the Elation gear and adds that they were also budget-conscious when choosing equipment. “I’m thankful for the lighting team of Joe Casper, Parker Wall and Kyle Wolfe for working hard and bravely in 100-degree days and rattlesnake nights. I am also appreciative of programmer Joe Watrach, who made the best of every fixture’s parameters with speed and precision.”

The lighting cues were initially programmed and timecode recorded by Joe Watrach in Burbank. “I very much appreciated his speed and organisation skills,” explains Sarah who took over for the updates during the Arizona production rehearsals and also operated herself during the filming.

No camera rehearsals made delivering this imaginatively ambitious and unique show even more of a challenge as the first time

Sarah saw any screen previews of the lighting looks was while filming the takes! Having that showfile created so tidily and with the ability to make swift and clean adjustments greatly assisted this part of the process.

The first ‘day’ was a grueling 38 hours with a short power-nap break for the crew. The desert site rig was built, programmed at night and filmed in the early hours, then broken down and moved to the vaults for another recording session to start as soon as darkness fell.

During the days they contended with 100 degrees plus desert heat and searing sun, and during the nights rattlesnakes and scorpions kept everyone company. They also had to ensure the site was operated as COVID-safe, with regular temperature checks, sanitising, social distancing and masking.

Despite all these demanding conditions, the results were truly spectacular, and the sounds and visual integrity of the concert have been highly acclaimed and enjoyed as an integrated opus of music and art.

Ryan Knutson and Brown Note Productions have worked with the concert’s producer Danny Wimmer Presents since 2014, and relished this opportunity to be the technical partner “for this incredible and particularly fun project”.

The Lake - Lightsky AquaBeams | Chauvet Professional Strike 4s | 10W laser | Chauvet DJ 375Z Spot | 1.2m Blue Fairy Curtains

# HIGH IMPACT LIGHTING

by Jason Allen

## The Enchanted Garden at Roma Street Parkland

**Brisbane’s Roma Street Parkland has been hosting ‘The Enchanted Garden’ Christmas light display for six years. A free event, and usually somewhat sedate, it’s traditionally been a static but beautiful fairy light display for families to enjoy while walking through the gardens. At least it was until the 2020-21 season, when Ash Neuendorf and High Impact Lighting got involved. “Yeah, I might have got a bit bored during COVID and got a bit hectic with the design,” admits Ash...**

With eleven separate experiences plus the entry, Ash’s own design brief was to never repeat a look or style once the audience had seen it. “One of the criticisms we’d heard from previous years was that kids in particular would get bored after three minutes,” Ash relates. “I have two kids, and my youngest has just turned three, so I kept them in mind when designing it. I wanted to tell a story, so the show is always introducing new things, and hopefully the kids don’t get bored!”

**The Inevitable COVID Overlay**

While Queensland has been one of the least virus-affected states, Ash and High Impact have still had the majority of their work cancelled. Thankfully, Queensland Health were quick to approve Enchanted Gardens’ 2020-21 season, largely due to it being outside and easily controllable in terms of visitors. Bump-in was undertaken over a two-week period, with programming and timecoding for three days after everything was in and connected. “The whole show is set-up so our site techs just press ‘play’ and

the whole show syncs together,” explains Ash. “The hardest part of running the show is just how long it goes for. It’s over two months, with two staff on site. They get in at 3 pm and turn it on, and turn it off and leave at 10:30 pm. There used to be 8,000 allowed through at a time, but that’s reduced to 2,000 due to COVID, so they’re running more shows over a longer time period. And it’s such a large site that you’re better off riding a bike than walking!”

**The Great Outdoors**

The reinvented Enchanted Garden is all about taking what was a static show and making it dynamic. This meant control, programming, content, and distribution. “This all needed to be controllable and mappable, so we needed to roll out consoles, media servers, and fibre,” offers Ash. “What we discovered is that installing all of that tech into a parkland is so much more challenging than setting it up for a stage. On paper everything looked really cool, and it is, but it is hard to implement this kind of design outside, at scale, in weather. The fun part for us was going through the visual concepts from scratch and figuring out how to make it work, even if the general public will never have any idea what makes all of it go!”

**Control, Media Server, and Data**



The Entry - GLP X1s | Blue 1.2m Fairy Light Curtain



Fairy Tale Bridge - High Blue Fairy Light Curtain | LED RGBW Pars

**“The reinvented Enchanted Garden is all about taking what was a static show and making it dynamic.”**

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The Bloom - MAC2000 Washes | LED RGBW Floods | LED RGBW Pars | RGB 2W Lasers | Chauvet DJ 375Z Spots



UV Tunnel - UV Floods | Neon Butterfiles

All up, Ash's design ended up consuming a solid 64 DMX Universes of data, and also added audio via Dante at the Pendant Bridge and Lake. Handling the bulk of control duties is High Impact's trusty ChamSys MagicQ MQ500 Stadium console. It takes an Art-Net feed from media server software Resolume running on a PC (which provides video for pixel mapping) and merges it with the Art-Net data programmed in the console before sending it all out. It's also running sACN. It's a complex set-up, but rock solid.

Resolume is running video custom created by High Impact for each area, pixel mapped across the huge LED canvasses Ash has designed, including fairy light curtains, neon flex, addressable fixtures, and more. The ChamSys is programmed to feed the pixel mapped LEDs shifting background colours, while Resolume runs video over the top, adding patterns and shapes.

### Practicalities and the Environment

While obviously an outdoor gig in a steamy Brisbane summer, the first environmental challenge was the garden's infrastructure. "The sprinkler system came on when we were bumping in!" laughs Ash. "That was a waterproofing test as good as, if not better than, rain. When a storm came through a week later, we knew we had already been tested and passed."

With such a complex show, Ash and High Impact had a lot of power and data to manage while ensuring that it would be in no way affected by the weather. They divided up the Parkland into four power zones, serviced by five LSC Control Systems APS intelligent power distribution systems. The APS units send out all power, breaking out to Neutrik powerCON TRU. For the all-important Art-Net, sACN and Dante data, four Luminex Gigacore fibre nodes service five zones of the show.

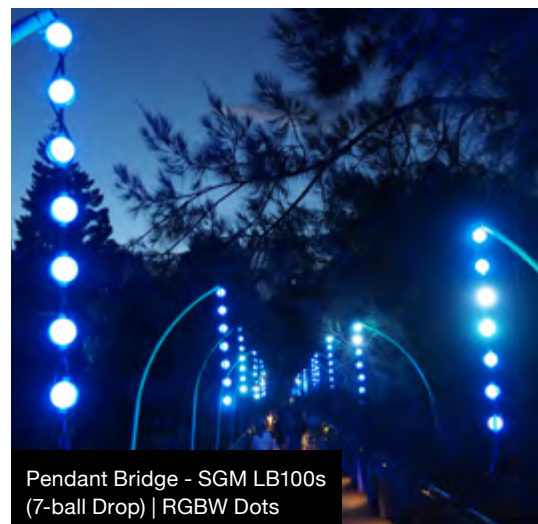
Ash also relies on Luminex LumiNode DMX splitters to keep the show running headache-free. "I had to replace two weeks; both were power supply failures," sighs Ash. "I replaced them with LumiNodes because we just don't have those issues with Luminex. We just don't want to worry about it, and Luminex do peace-of-mind really well. Both the LumiNodes and Gigacores have been flexible and rock-solid, working on all of our large projects."

### Highlights

When asked which parts of the Enchanted Garden are his favourites, Ash nominates the Pendant Bridge and Spectacle Garden. "The Pendant Bridge has the SGM LED ball drops coming down from bendy pipe. There's 42 of them hanging down, all pixel mapped, and the video file is really fun. In the Spectacle Garden, we have a Kvant 10W laser projecting into the treetops. As the trees are naturally staggered, when you run laser patterns up into the canopies, you get this great sense of depth and play. People tend to stop and stare in a bit of awe, which is very satisfying. Overall, what I really love is that every section of the show is different. It keeps people guessing as they walk through and experience new elements as they appear."



LED Wisps - Chauvet DJ 375z Spots | LED Pars | Blue Fairy Light



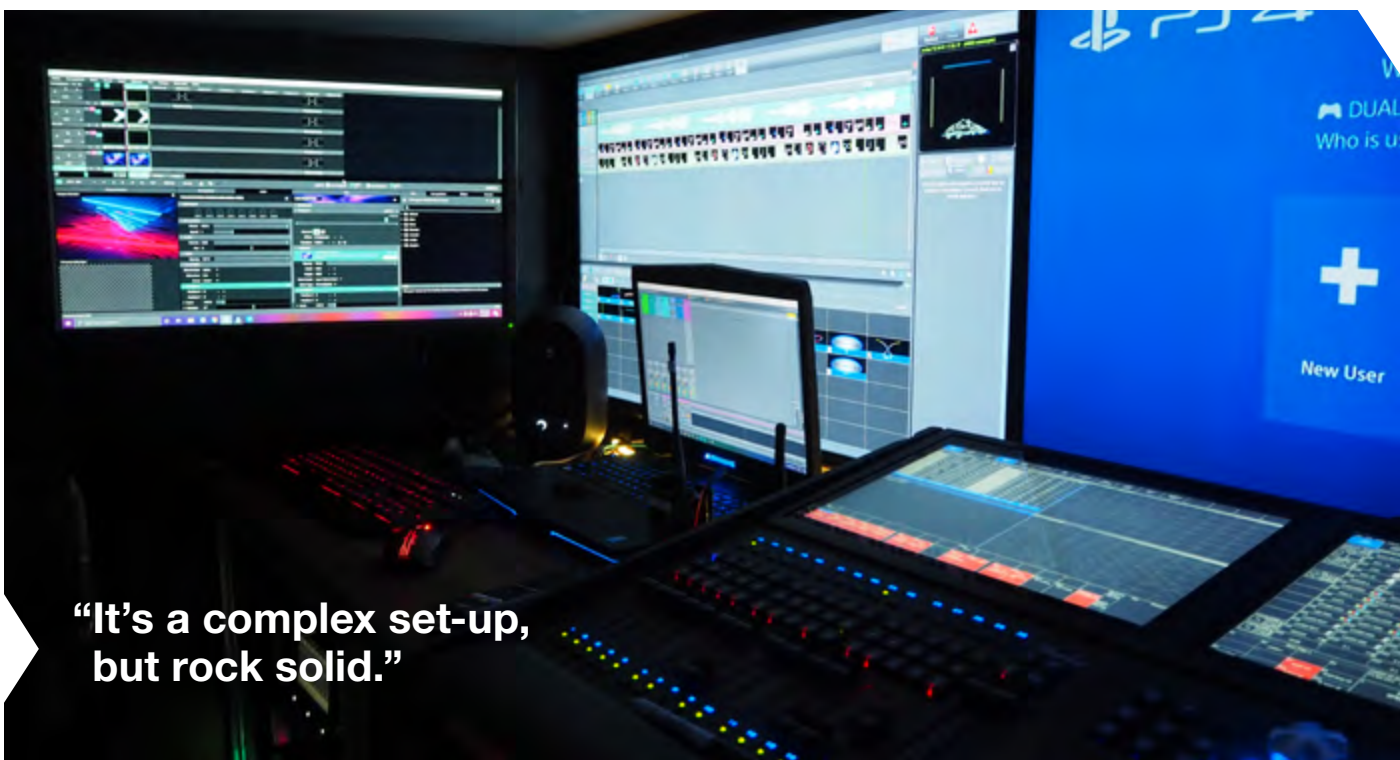
Pendant Bridge - SGM LB100s (7-ball Drop) | RGBW Dots



Flex City - Neon Flex

**The Enchanted Garden - Control System:**

- 1 x Yamaha TF Rack with Dante
- 4 x Audinate Dante AVIO DUO
- 2 x Bird Dog Studio NDI
- 1 x Show PC - Resolume video & Pixel Map
- 1 x Show PC - Beyond Laser Software
- 1 x Show PC - Ableton Live (tracks and timecode)
- 1 x Chamsys MQ500
- 5 x LSC APS 3 Phase Units
- 5 x Luminex Gigacore 10
- 5 x LumiNode 4
- 1 x LumiNode 12
- 8 x LumiNode 1



**“It’s a complex set-up, but rock solid.”**

# THE SEARCH

by Andy Stewart

**If you're anything like me, sometimes you wake up in the morning, walk into the studio and think: "I've seen all this gear before, I've heard it all before, but somehow I have to use it all again to find new musical inspiration? I really need another coffee."**

If that sounds like you at the start of the day more often than you might care to admit, take comfort in knowing that we all feel that way sometimes. No-one I know flies through the studio door every morning like Rudolf Nureyev with an (impossibly high) spring in their step and a choreographed performance waiting to be busted out.

Mostly it's about tripping over said step, fighting the gloom of an artificially lit environment and odd smelling vacuum cleaner fragrance, as you confront the mess from last night's session.

When I'm faced with that squalid reality, I put on some music (that I'm not currently working on) and get to it. I hate starting work surrounded by the mess of the day before. One last tip on cleaning: if the vacuum cleaner smells horrible, understand one thing; it's never going to improve naturally! Replace the bag – don't wait 'til it's impossibly full or you'll just pump musty, moldy air into the room for you and your clients to breathe in all day.

Now, once that chore is out of the way – and if time permits – rather than searching for inspiration in the percolation of a new brew, flopping into the control room chair and staring at the computer screen, I like to fire up an instrument and start playing it (badly

or otherwise) without any preconceptions of what I'm looking for or where any cool sound I discover might fit into the day's work ahead.

This habit is partly why I find myself regularly buying new instruments, and possibly why The Mill currently feels as cramped as an Apollo Mission spacecraft. There are currently eight floor-standing keyboards, pianos and organs in the main production room alone – not to mention a Leslie and drum kit! It's getting quite ridiculous in here.

## Solution? Buy More Stuff!

If, like me, you're a bit bored with your current setup or circumstances, it might be time to start the search... again.

I'm not really one for promoting the idea of buying stuff all that often, but if you've recently found yourself wearing out a track to the studio door and staring blankly at the screen before you're even fully conscious, it might be time to take a different approach to the new year ahead.

For me, last week was all about feeling precisely that way: pretty flat about the instruments around me and finally deciding it

was time for a new sound, and possibly a new instrument.

And yes, before I go any further, I'm well aware that another part of me (and many CX readers out there) might say at this point: "Hey Andy, why not just get to know the instruments you already have a little better?"

That's true, I should (and I will, I promise!). But this approach was never going to solve the malaise I was feeling about the all-too-familiar sounds around me. 2020 had exhausted me of my ability to find inspiration from within. I didn't want to have to work hard to dredge a new sound out of an old instrument. Frankly, I didn't even want to look at them! I really wanted a new sound to just stand in front of me and slap me across the face.

So last week I bought a new keyboard out of the blue: a Yamaha CS-60. Some of the synthesizer heads amongst this magazine's readership might raise an eyebrow at this purchase, and possibly know the synth quite well. It's a pretty famous keyboard from the '70s – kind of the equivalent of saying you bought a Neumann U67 for the studio's mic collection.

The CS-60 (little brother of the CS-80) is a bit nutty, quite outrageous sounding, and possibly my most extravagant purchase of the last few years. It came to me quite by accident; I certainly hadn't been looking around for one. But they're quite rare so when the opportunity arose, I figured it was now or never.

Will it inspire me for months or years to come? Who knows? It's a bit hard to tell at this point. Early impressions, however, are that the synth is pretty enticing, mainly because it seems



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

to be able to fit into soundscapes pretty easily with the simple fiddle of a few slider controls. Oddly enough, it's equally capable of sounding insanely off-the-wall and pure B-grade '70s sci-fi at the flip of an LFO. In short, it's quite bonkers.

## Put A Ring Modulator On It

And so today I walked into the studio, sat down at the CS-60 and started noodling with all the switches, sliders, oscillators and tone selectors. I still felt pretty inflexible, so the purchase hadn't made me any fitter, or younger, or more like Nureyev, but the synth most certainly put a spring in my step.

In fact, I'd go so far as to say I was pretty excited by what I heard within the first minute of playing it. It's a very hands-on interactive synthesizer with an eccentric quality that's quintessentially '70s. It may turn out to be just what I need to get 2021 rolling (or is it 1977? I can't tell).

## From Me To You

New (or old) synths mightn't inspire you at all, of course, but what does? Maybe a new guitar, or some outrageous new pedals perhaps? Wherever your inspiration lies,

now might be the time to get yourself a new toy or two, and rediscover what landed you in the studio in the first place – the thrill of encountering new sounds. 2021: the reboot.

This year looks to be the year of the synth for me though. There's a wide range of new models on the market, many of them reissues, upgrades or rip-offs of some of the most famous keyboards of recent decades. Which is fine by me.

Many of the originals that inspired this latest generation of synths were extremely expensive when they were new. But the prices some of these go for now is just ridiculous! Forty grand for a Jupiter 8? You must be joking! Rich bankers (did I say bankers?) with more money than talent are clearly 'investing' in these instruments for whatever reason, and this is driving the prices L.F.-up and O-ver the top!

Many would argue that electronics of this calibre in the hands of rich tossers is a tragic waste of good synthesis, but it's a blessing in disguise, in truth. The new ones are cheaper, more reliable and more versatile than ever, making them far more effective studio tools than any dodgy, ludicrously priced '80s synth with an unobtainium chipset. (This opinion coming from the same idiot who just bought an old synth from the '70s for a small fortune!)

If you're into old synthesis – or new synthesis

for that matter – there are countless options out there now with a retail price tag that's far less onerous than the originals once were. In some cases, with the same money that once scored you one keyboard, you can now buy 10. Pretty cool.

I'm interested in checking out things like Sequential's Prophet 5, Korg's very popular MiniLogue XD, and even the wide array of keyboards by Behringer: the Deepmind6, the Vocoder VC340 and the MonoPoly (to name a few), all of which are based on famous synths of yore... so closely in fact that you have to look quite hard to spot the new one. Frankly, I don't understand how that happens... Behringer even seems to be using the same font as the originals in most cases! I don't get it.

Either way, I'm going easy on myself in 2021. I'm not going to work hard to get the most out of the stuff I already own. I've done that for decades and I'm moving on!

In 2021, I'm gonna buy some new stuff and let it slap me across the face with a planet-sized serving of fresh inspiration. I want new colours, new flavours, a sonic palette to die for and even new plastic! I can't expect coffee to inspire me anymore, not that it ever did. Frankly, I hate the stuff unless it's laced with sugar.

# Festival of Lights

by Jenny Barrett



## No Stopping New Plymouth's TSB Festival of Lights - Council determined to deliver iconic forty-four day festival

The 2020 New Plymouth TSB Festival of Lights opened to larger crowds than ever before. Perhaps the audience were enticed, not only by the promise of live music from The Warratahs, a new feature of the opening night, but also simply because they could. Taranaki was out in force celebrating still being able to connect in person, whilst the rest of the world faced strict holiday lockdowns.

The roots of the Festival date back to 1953 when a fountain was installed in Pukekura Park's Fountain Lake and the Poet's Bridge and Main Lake illuminated to celebrate Queen Elizabeth's coronation. Two years later the

Queen came to see it in person and lights were added to the fountain. In the 1970s music and entertainment became a feature, and in 1993 it officially became the Festival of Lights. Since then, New Plymouth District Council (NPDC) has lit up the park at the heart of the city every year, regardless of storms, global financial crashes, and can now even lay claim to battling on through a pandemic. The free event spans 44 days and nights, and this year includes fifteen new lighting installations, many still sourced from overseas, no matter the logistical complexities.

That the Festival went ahead at all is testament

to the stakeholders' commitment and the core event team's hard work. When asked if the Festival was ever in doubt, Hayley Olliver, Festival Manager, chuckles, "Oh yes, but only if the Government's restrictions had prevented it." Hayley and her team, Lighting and Operations Manager Fraser Ross, Entertainment Curator Lisa Ekdahl, as well as the key stakeholders NPDC, the TSB Community Trust, MJF Lighting and the Toulouse Group, spent the majority of lockdown planning for every eventuality, determined not to let New Plymouth down.

"Whilst waiting for the government guidance for events, we pulled together Plans A to G! It soon became clear that running an event in an open park meant that we could only go ahead at Level 1. We focused our planning and covered every Level 1 scenario, with options to scale the event as appropriate." Hayley admits



it wasn't easy, "It is really difficult to plan for something that is an unknown quantity, and once we returned to Level 1, we had a much shorter duration than normal to pull it all together."

The usual request for Expressions of Interest quickly went out for lighting artists around the globe who wanted to be involved, stipulating that this year they would need to rely on the local team to set up the lighting installations, due to New Zealand's travel restrictions, a big ask for some of the big names. Each year MJF Lighting and the Toulouse Group work with Hayley's team to screen the submissions to ensure that they will last the distance, over fifty days outdoors. In some cases, a few polite

suggestions are required to substitute some materials but this annual to-ing and fro-ing paid dividends, "Fortunately over the years we have built up strong relationships with the artists and they were comfortable trusting our team on the ground...although there were a lot of Zoom calls."

The Festival requires twelve hundred fittings and over sixteen kilometres of cable, all of which is tested and tagged, so MJF Lighting get to work two to three months out. Five weeks prior to opening, the team begin work at the park on the base lighting, this year working through four days of torrential rain to keep the programme on schedule.

Hayley and her team rely heavily on the feedback collated from the annual customer surveys to achieve the winning formula for the Festival, "A few years ago there was a clear desire for more immersive and interactive designs, and so we moved from solely aerial to include more ground based installations." This year they have continued with this push, with Renzo B Larriviere and Zara Pasfield's (Peru & Australia) 'Wise Monkeys' installed in trees teasing passers-by with their chattering. Will Smith's (NZ) overhead firework installation is accompanied by bangs and wooshes, and Simon Watt's (NZ) 'Baseline' laser beams allow you to create your own DJ breaks.

Hayley's favourite installation also



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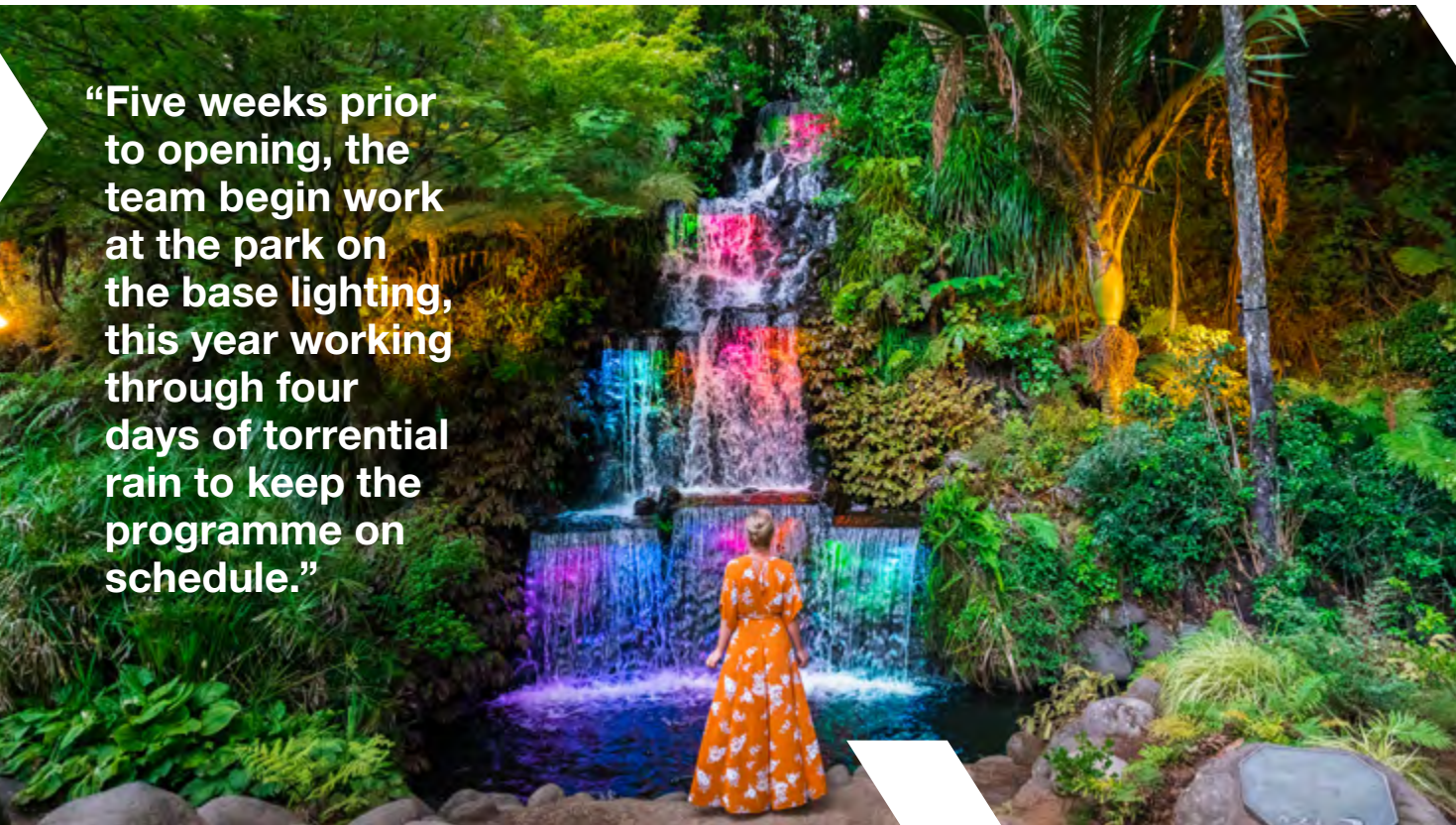
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“Five weeks prior to opening, the team begin work at the park on the base lighting, this year working through four days of torrential rain to keep the programme on schedule.”



encompasses audio, “Six years ago when I first worked on the event, I wanted the lighting installations to complement the natural surroundings of the park, and this year I really feel that has come to fruition. One piece achieves it perfectly, Renzo B Larriviere and Zara Pasfield have created ‘Lily pads’ featuring spectacular frogs singing away.”

Other stand out pieces include ‘Shrooms’ by Australian light sculptors Amigo Amigo, channelling Alice in Wonderland with stunning colourful mushrooms. Kiwis represented include artist Anton Van Dorsten, who helped the event team with the international installations. His piece, ‘Full Spectrum’ features a tunnel of seven hexagonal light sculptures. Angus Muir, renowned for his permanent and temporary commissions, provided ‘Mountain of Light’ which comes to life with a dramatic repertoire of lighting effects

culminating in a simulated eruption of colour and movement.

NPDC and their Festival team, supported by over fifty volunteers, should be proud. They have pulled together not just a visual and experiential spectacle on par with every other year, but perhaps more importantly have provided an opportunity for locals and visitors alike to mix and mingle and celebrate. And let’s not forget the economic spin off for hard hit audio-visual, lighting and event companies who are involved too. Hopefully, COVID levels permitting, the Festival makes it to Day 44, and inspires other Councils to do the same.

For any budding lighting designers who would like to apply to be included in any future TSB Festival of Lights, keep an eye on the Festival’s social media channels for requests for Expressions of Interest.





# Leading in times of change: Australian companies embrace the future

**In today's unpredictable world, companies face a tough decision: to survive and get through it, or to thrive and develop a new worldview and set of tactics that will favourably position them for the opportunities that exist in the new normal. That's exactly what happened here in Australia at the end of March 2020 when we began living under strict lockdown rules with many industries, including live events and entertainment, shutting down overnight.**

However, with the doors to live production locked until further notice, many companies quickly realised that they needed to adapt. Instead of producing events on location which, in many cases, was simply not possible due to global restrictions, the location could be 'virtually' brought to the production.

Those already in the virtual studio space shifted up a gear, while others took a look at their business models and realised that they too could migrate into this new arena. Audio Visual Events (AVE), Big Picture, Ikonix, Intraware, Last Pixel, Mediatec, Novatech, Spectre Studios, Technical Direction Company (TDC), and Woohah Productions are all great examples of businesses that have fully embraced the era of immersive



**“Its revolutionary Dynamic Calibration technology has raised the bar for virtual production once again.”**



storytelling by taking full advantage of Virtual Production, Extended Reality and Mixed Reality workflows either by creating their own virtual production facilities, or by supplying LED screens with high quality LED processing to creative content production companies.

For those companies, Brompton Technology has become the gold standard in LED

processing due to its exceptional image quality on camera and comprehensive feature set. Tessera processing offers very low latency and perfect system-wide synchronisation, with a variety of useful genlock options, as well as the ability for users to seamlessly match their LED panels, do detailed on-screen colour adjustment, and control the system remotely.

“Choosing Brompton was a no-brainer for us,” says Josh Moffat, Business Development at Big Picture. “The company has been our loyal partner and a perfect LED processing solution for years, with its Tessera processors offering exceptional colour control and comprehensive image manipulation, coupled with quick easy tools like the OSCA seam correction feature.

The advanced remote control options have also been a particular benefit to us in this workflow, given the current situation.”

AVE’s general manager, Paul Keating, cannot agree more, describing Tessera’s interface as simple and easy to use. “Setting up angled ROE Strip is very easy in the Tessera software, with the ability to rotate fixtures on a canvas,” he says. “The SX40 accepts high resolutions and 12G SDI signal from our E2 which is all processed with no visible latency. With the XD 10G distribution units, we can simply run a fibre cable up to the screen then distribute the signal from the XD to the panels, saving us both time and cable runs.”

Although originally developed with the live entertainment sector in mind, Brompton has embraced the challenging requirements of cinematographers and creative content producers. Its revolutionary Dynamic Calibration technology has raised the bar for virtual production once again, unleashing the true performance of LED and breathing new life into existing panel inventory. Dynamic Calibration is the enabler for Brompton HDR (High Dynamic Range), which delivers exceptionally realistic-looking image quality, especially for content with extreme contrast, or when achieving true, natural skin tones on-camera.

Anticipating the future needs of creative content creators, Brompton Technology has developed a new feature set for its Tessera v3.1 software, launched in January 2021. The new release includes innovative features for the Tessera SX40 and S8 processors such as HFR+ (High Frame Rate), which enables support for frame rates up to a massive 250fps (frames per second), and a new Frame Remapping feature, bringing a range of creative options for VP workflows.

Building a strong organisational immune system rather than maximising short-term profits has been part of Brompton’s vision right from the beginning and has paid off tenfold when the company, like many others, was faced with the many obstacles presented by the pandemic.

“To us, Brompton Technology is a world leader in what it does; its products and 24/7 technical service is the best in the industry. That’s why we had made a promise to only buy Brompton for our hire/rental stock,” says WooHah Productions and Studio45 MD, Arosh Fernando.

Spectre Studios’ Technical Director, Rick Pearce, echoes Fernando’s thoughts: “We feel confident that with our knowledge and expertise, as well as working with leading industry partners such as Big Picture that supply future-proof hardware that we can rely on and trust, like Brompton’s Tessera processing, we are able to facilitate whatever challenges our clients throw at us and whatever new technological innovations come our way in the new year. Bring on 2021!”

By embracing new technologies these Australian companies have achieved noteworthy firsts including Australia’s first full Virtual Production for TV commercial, the world’s first live to air XR broadcast, and hosted ACS (Australian Cinematographers Society) for hands-on creative sessions with some of the country’s best DOPs. They have now made virtual production a standard part of their creative toolkit, used for product launches, fashion roadshows, music live streams and news bulletins, not to mention high profile sports events like the 2020 NRL Grand Final and State of Origin series.

“Being resilient and retaining focus on our long-term strategy of innovation to solve the needs of our customers today and in the future has been especially critical in these uncertain times” concludes Brompton’s CEO, Richard Mead. “We look forward to continuing to work with our Australian partners and seeing how Brompton HDR technology, as well as the exciting features of the new Tessera 3.1 software, can support them with their creative projects and virtual production workflows in 2021.”



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# CTRL - BRING DEVICES TOGETHER ON YOUR IPAD

by Simon Byrne

**Many readers would be familiar with TouchOSC, which is the de facto standard for controlling devices by way of MIDI or OSC on iPad and Android devices.**

It is a great tool, but it is limited to those two protocols. A couple of young guys in the UK, James Walton and Matt Didon from ON LX Limited, have seized on this shortcoming and produced Ctrl for iPad.

Ctrl for iPad is a self-contained bespoke user interface creation tool that gives you the front-end to control most devices on a network by way of a fully customisable user interface.

The app has support for MIDI, OSC, video and audio playback from the iPad over HDMI or Airplay, HTTP (HTTP/1.1 GET, POST & more), TCP, UDP, sACN (DMX over WiFi or Lightning to Ethernet) as well as several API methods to send data back to Ctrl for iPad. On top of those generic methods, it also has tight integration for Madrix, Enttec ELM and Spotify.

Ctrl for iPad is designed for use in fitness centres, venues, museums and architectural installations. Essentially anywhere that is interfacing with multiple systems such as pixel mapping software, video matrixes, local digital signage, audio mixers and wants to combine all of the key controls into a single

easy-to-use interface to present to an end user.

All of the design and programming is done on the iPad itself. You start off by creating a workspace. Double click in the workspace and a menu opens up where there is a large selection of push buttons, toggle buttons, sliders, rotating dials, two axis controls, steppers and so on. Once you have chosen your controller, you assign what is being controlled and the method to that control. Multiple output commands can be assigned to the same control and can be fired or modulated simultaneously.

Video and audio files can be loaded into Ctrl on the device itself and played out on HDMI (using an adaptor) or Airplay. I can see this being a great simple solution for playing videos at for example, a museum kiosk or trade exhibition stand.

The layouts are customisable, so looks can be developed that suit the aesthetic of the client's brand. You literally drag to move and resize controllers and there is a comprehensive selection of colours and

options to choose from where you can create your own colour palettes.

As well as the button style interface, it also has cue lists (called linear interfaces), not unlike Qlab. You operate control outputs in a cue stack method with features such as pre and post delay, looping and auto play.

Ctrl for iPad supports multiple users. That means you can have a user for programming and setup, and users for day to day use that are only able to access the end user controls and not get themselves into trouble.

For installations where reliability and security are needed, installers may opt to use a Lightning to Gigabit Ethernet with PoE adaptor (such as those by Redpark) so the iPad is always charged with hardwired network connectivity, and mount it in a theft proof iPad mount (Bouncepad are a popular brand for this).

Ctrl for iPad has three variants. The Pro version is about \$130 AUD.

**Ctrl for iPad**  
<https://labs.onlx.ltd/ctrl-for-ipad>

**Redpark Lightning to Gigabit Ethernet with PoE adaptors**  
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# Retro-Active – Monitor City go to MILAN with Adamson CS-Series

by Jason Allen



**When Adamson announced its new MILAN enabled ‘Intelligent Loudspeaker’ range, the CS-Series, at InfoComm Connected 2020, it felt like AVB had grown up. The five mid-high line array and point source boxes, two subs, four power and data units, and new Control Suite software create an entire AVB environment offering granular control of the PA, along with the ease-of-use of network cabling and active speakers.**

What was surprising about the announcement was that owners of the existing passive Adamson S-Series could retrofit their inventory to bring themselves into the new ecosystem with a simple upgrade module and a screwdriver. Melbourne audio specialists Monitor City, headed by directors Matt Dufty and Adrian Barnard, have opted to do just that, and at the time of this interview with Matt, were opening up their pallet of CS Upgrade Kits, screwdrivers at the ready.

Not only have Matt and Adrian opted to upgrade, they’ve extended their existing S10 line array and S119 subwoofer fleet with more

CS10s, CS119 subs, and a raft of CS7p point source boxes. In a year that felt like it was made of nothing but bad news, hearing that a production company in Melbourne (of all places) was investing in their future in late 2020 was like seeing green shoots growing after a devastating bushfire. Which of course we also had in 2020.

#### Back on the Tools

“Like everyone in production, the year we’ve had has been a real hit,” admits Matt. “However, the timeline for this kind of investment is long. This is a 10 to 15 year

commitment. We made these plans a while back, and while the timing isn’t fantastic financially, we didn’t want to cancel. At least we’re not super busy while we’re commissioning the new system!”

Matt is sanguine about the prospects for recovery in 2021, as well you might be when you’ve been part of the world-leading Melbourne response to the second wave. “While we’re still unsure of timelines regarding further easing of restrictions, there’s now a reasonably open economy for business events and festivals,” he observes. “We’re hopeful, and we know there’s a massive appetite for getting out and doing events, which is pent-up demand after lockdown.”

#### Doubling Down

Monitor City first invested in their S-Series PA as a supplement to their flagship Adamson E-Series system. They first deployed their S10s as fill, before sending them out as standalone or distributed systems, often ground stacked on their S119 subs. Their success as an all-rounder has led to the decision to double their inventory, while converting the lot to CS.

“When Adamson first announced CS, we had a lot of questions,” explains Matt. “We needed to know how the MILAN environment worked, how interoperability was guaranteed

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\*typically Audio/Lighting/Staging



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Casual	7%

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L-R - Monitor City's Dean Peters, Nana, Matt Dufty, and Daniel O'Callaghan

with other gear, and most importantly, how it would all integrate with our existing E-Series rig. Both Adamson and local distributor CMI have been hugely supportive of us through this process, even involving us in beta testing of the new Control Suite software. After going through this whole journey, we decided to press the go button."

### Simply Smart

"What is most exciting to me about the conversion is the flexibility it gives us in show design," Matt enthuses. "We've got a broad client base and do everything from a couple of speakers on sticks to major sporting events, festivals, and corporate. A lot of the time, it's way more than just a left-right PA; we do a lot of distributed systems. For example, our arrays might be hanging off a truss for an in-the-round event, pointing in every direction. Or it might be an event with a plenary at one end, and a circular stage in the middle. Going to CS-Series means the cable runs and organisation for systems like this becomes a lot easier."

With every CS-Series box sporting its own DSP and amp, Monitor City will have total control over every parameter of every box in their systems. "It gives us granular abilities," Matt illustrates. "When you're using passive point source boxes, you put four on an amp channel and that's your zone. With CS-Series, every box can be its own zone. This is incredibly useful for things like broadcast jobs

with audiences sat around multiple stages – we can focus all audio so there's no bleed into broadcast mics. It can come down to just a few decibels here and there, but that's what it takes to keep everyone happy sometimes."

The new version of Adamson's Control Suite software has added a proprietary Array Optimization algorithm, which will let Matt and the team fine-tune every aspect of their CS10 hangs. With DSP and amplification in every box, Monitor City and their customers will be able to use the software to determine the best way to hang the arrays, have the tonal response unified automatically with FIR filters, and then be able to alter the level and even the phase response of every single element as required, all without adding any further latency to the system.

### Micro-Management

Matt's not going to miss managing amp racks and speaker cable runs. "We've done 60 and 70 metre speaker cable runs to different zones, and this is the end of that!" laughs Matt. "And in terms of inventory management, because every box has an amp, we don't have to work out what racks are available, or where to put them at the gig. With all the processing in-the-box, we just plug in a laptop and get it all up and running. Even the integrated power modules in CS-Series talk to the software. The scope of what you can do with this system is amazing. It makes 'tricky' easier."

While the CS10 line array element is the rock star of the new system, the workhorse is the CS7p point source cabinet. It's a two-way sporting dual 7" Kevlar drivers and a 3" compression driver, MILAN connectivity with the ability to daisy-chain, and analog XLR in and out. "We've got a stack of them, with rigging for each box for when we hang them off truss," reports Matt. "The CS7p is our all-rounder, and because they have their own processing, we can drop them in individually to cover one section or area. They're ideal to help with difficult rooms with acoustical issues. For example, we can design a gig in-the-round with arrays pointing at the top tier of seats, to which we then add multiple sources pointing at 200 seats each in the lower sections. Now we can do that with CS7ps, each zoned and granular, to get the best result without exciting the room too much."

### D.I.Y.

Poised to begin work on the conversion of their existing stock, Matt outlines how simple the procedure is. "All we have to do is take four screws out, remove the existing back panel, put the new CS-Series Module in, connect some internal cables, and change the grille to a new one with a different logo," lists Matt. "It's almost certainly going to take us longer to decommission our old serial numbers and create new ones in our inventory database than it will be to physically change the cabinets!"



# Take Control of your Environmental Impact

by Jason Allen

When speaking with my esteemed colleague, John McKissock of Clearlight Shows in Melbourne, we often bring up the same topic; the environmental benefits of upgrading lighting rigs from traditional fixtures to LED, and the shocking environmental impact of buying, then disposing of, inferior products. We're like broken records. So, we thought we'd take this opportunity in the 'Control' issue to bring a bit of data to the argument, along with our strong opinions.

The fact is, there is a cost as well as an environmental benefit to finally getting around to upgrading your community theatre or school hall. Power management systems like LSC Control Systems' APS ensure power up and power down of an entire rig can be automated, and nothing is drawing current when not in use. There are a range of movement sensors, timers, and control systems that can also be deployed to manage and analyse fixture and room usage.

It's well-known that LED lighting fixtures use a fraction of the power of traditional discharge fixtures, but there's also the cost savings of reduced maintenance, and quite surprising amounts to be saved in air conditioning. All of this helps reduce carbon emissions if your electricity is being generated from fossil fuels.

When planning a transition to LED, there's the trap of the many, many extremely cheap but ultimately poorly made and disposable LED fixtures available in the market, particularly online. Like everything else in life, you get what you pay for. What's even more of a concern than money wasted when these unrepairable fixtures end up in the bin is that cheap electronics and plastics often contain particularly nasty metals and chemicals. What goes into landfill ultimately ends up in the water table and our soil.

"I personally have an issue with customers

wanting to buy cheap Chinese fixtures that I know will become landfill in a couple of years," emphasises John McKissock. "At Clearlight, we work with our customers to budget for a sustainable, longer term option of affordable, quality product. We have products that are competitive in quality to the top-end offerings on the market at very competitive prices. We're also able to offer our second-tier of theatre LED products suitable for school and community theatre projects that have tighter budgets. There's no logical reason to buy a \$500 fixture three times over six years and dispose of them in landfill when you can buy a \$1,200 fixture that will last for 10 years. We have never compromised on the quality of the product that we offer to our customers and never will."

But don't let the rantings of an inner-northern latte-sipping Melbournian Leftie (me) and an aging Hippy (John) put you off – we have data!

The following measurements were taken by Clearlight in their warehouse at 5 metres, and show examples of typical savings when comparing fixture wattage and output.

## TRADITIONAL FRESNELS

Selecon Acclaim 650w Fresnel (reading taken at 6°): Lux 115

Selecon HP 1200w Fresnel (reading taken at 7°): Lux 435

Selecon HP 2000W Fresnel (reading taken at 7°): Lux 325

## LED FRESNELS

Showtec Performer 1500 Tungsten 100w LED Fresnel (reading taken at 10°): Lux 306

Showtec Performer 1500 RGBALC 100w LED Fresnel (reading taken at 10°): Lux 235

Showtec Performer 2500 Tungsten 250w LED Fresnel (reading taken at 10°): Lux 610

## TRADITIONAL PROFILES

Selecon Acclaim Axial 18/34 600w Profile (reading taken at 26°): Lux 200

Selecon Pacific 14/35 1k Profile (reading taken at 26°): Lux 140

## LED PROFILES

Showtec Performer 3200K 250w WW DDT Profile (reading taken S4 26°): Lux 390

Showtec Performer RGBAL 270w Profile (reading taken S4 26°): Lux 260

Using these measurements and manufacturer data, this would be the cost savings for a small lighting rig:

## TRADITIONAL FIXTURES

20 x Selecon Pacific 1k Profiles = 20,000 Watts per hour

20 x Selecon 2k Fresnels = 40,000 Watts per hour

Total: 60,000 Watts per hour

## LED FIXTURES

20 x LED Performer RGBAL 270w = 5400 Watts per hour

20 x LED Performer 250 Fresnel 250w = 5000 Watts per hour

Total: 10,400 Watts per hour

Total saving of 49,600 Watts per hour

As with most environmental issues, it's cheaper and better for the bottom line to go Green. So even if the accountant holding your venue's purse strings thinks climate change is a fairy tale invented by George Soros so Bill Gates can implant us all with subcutaneous microchips, a massive reduction in costs is usually enough to make them sign off with a big, satisfied grin on their face. So go to it, eco-warriors!



# TOTAL CONTROL

by John O'Brien

**Hey good CX folks, in case world events have you a little distracted, it's summer again. Depending on where you live and how locked down you are, sun, sand and surf might be a little out of your reach right now. By choice, I am staying in the mountains where summer means fire. As part of that, I'd like to delve into some of the operational structures, facilities and resources that emergency services (and CFA in particular) use to control urgent events like fires.**

## Control, command & coordination

Where I live, Emergency Management Victoria (EMV) is responsible for coordinating agencies and their resources during emergencies. To do this they use a system of six Cs:

**Control** - The overall direction of response activities in an emergency, operating horizontally across agencies.

**Command** - The internal direction of personnel and resources of an agency, operating vertically within the agency.

**Coordination** - The bringing together of agencies and resources to ensure effective preparation for, response to and recovery from emergencies.

**Consequences** - The management of the effect of emergencies on individuals, the community, infrastructure and the environment.

**Communication** - The engagement and provision of information across agencies and proactively with the community to prepare for, respond to and recover from emergencies.

**Community Connection** - The understanding of and connecting with trusted networks, trusted leaders and all communities to support resilience and decision making.

Victoria's Country Fire Authority (CFA) follows these guidelines so that their response meshes easily with other agencies like Police (VicPol), State Emergency Service (SES) and the like.

## Lines of command & control

As with the rest of EMV, CFA has a chain of command in its control structure, called the "line-of-control". Initially, the crew leader on the first arriving appliance becomes the Incident Controller (IC) and runs the show onsite - they assess what is happening on the ground before making decisions and directing

resources. If they and their assigned teams can mop it up with the hardware and people at hand or in transit, great.

If not, and the situation deteriorates, control may be passed to an Incident Control Centre (ICC), which is often aligned with a District Command Centre (DCC). Next up the line of control is the Regional and then State Control Centres. By the time an incident gets to these facilities it is large and complex (like last summer's fires).

When the ICCs are not in play, a "line of command" is used. Here, the fireground IC reports to the Rostered Duty Officer (RDO - situated at the DCC). The RDO is responsible to the Regional Agency Commander (who reports to the Regional Controller) but also to the State Duty Officer (who reports to the State Agency Commander). It's onerous stuff, but it follows a well-tested and well-known set of procedures.

Earlier this week, we had a local fire that was resolved on site. The first tanker on scene couldn't initially gain access, so a local Deputy Group Officer (DGO) in a private vehicle set the scene (as IC) and then handed off control of the job to a Group Officer (GO) when they turned up. This job all ran smoothly and was easily quelled with six tankers in an hour or so. When things quieted down and it was clean up time, control was passed from the GO to Captain of the brigade remaining on scene.

If it was looking likely that it would take off or get too tricky, the job would have been escalated to the DCC (which was staffed and on standby as it was a Total Fire Ban day). On a non-TFB day, a nearby Local Command Facility (LCF - located in each Group HQ) would be contacted and prepared in case

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we needed some offsite coordination. They are also used to spread the load when there are multiple incidents running in a district. Fortunately, none of that was required in this instance.

When the heat is on, it's re-assuring to have pre-defined processes to follow. It can get pretty difficult maintaining clear thinking when you are surrounded by noisy trucks, whining pumps, low-buzzing aircraft and radios squawking everywhere. Not to mention being hyper aware of the visceral physical threat of nearby flames that you often cannot see for the smoke.

Like most emergency organisations, CFA has many pre-defined procedures and methodologies, outlined in Standard Operating Procedures (SOP). For example, "SOP J03.15 – Transfer of Control and IMT relocation, outlines the process for the transfer of control from the field-based Incident Controller to an ICC based Incident Controller."

### Control centres - what tech keeps us safe?

Control centres vary in their technical setups. Out in the field, we use a combination of digital VHF and analog UHF radios. Each appliance has a VHF link to talk to the state dispatch centre. We carry additional portable VHF units that can be switched to a discrete fire-ground channel for the IC to communicate directly with tankers, aircraft and other appliances or crew on scene. Forward Control and Field Operations Vehicles can also be deployed to provide extra radio and trunking facilities and are often used as control points on scene.

UHF radios are used for truck-to-truck comms and are particularly handy in our area, where we often lose VHF links. And don't even get me started on our crap phone coverage ...

An LCF will typically have multiple VHF radios and workstations, with reliable internet, landline phone connections and yes, faxes. DCCs and ICCs take it a step further and have dedicated spaces for many people. I visited

our local (District 22) ICC recently and took a good look around.

Gear-wise, six Tait digital VHF radios are rack mounted, and these feed several RU of Omnitronics radio management modules which then distribute comms to and from the DCC and ICC rooms. Pretty much everything else is IT-based, from intelligence gathering to analysis. Given the critical nature of emergency response, the server and communications room equipment have a backup generator always ready to go. Apparently, this one has been required more than once.

Surprisingly, the control rooms don't carry much high-tech AV equipment. Each has a couple of projectors and some intelligent whiteboards (which are mainly used as extra screens). The projectors get a fair workout and each workstation has the requisite PC but old school magnetised whiteboards and maps on a table are still used heavily.

When emergencies are escalated to an ICC or higher, an Incident Management Team (IMT) is assembled. Depending on the complexity of the job, the IC will often assign roles in Intelligence, Control, Operations, Logistics, Planning, Finance and Catering. At D22 DCC, the first four have their own workstations situated around the RDO. If they assign a job to the ICC, the workspace is much larger, with multiple workstations in a larger area and dedicated rooms off the side for Control, Comms, etc.

### Why so low tech in 2021?

Many of the information sources are IT-based and the state servers are where the heavy grunt work is done. Resource Tracking System (RTS), Emergency Management-Common Operating Picture (EM-COP), State Air Desk (SAD) and Computer Aided Dispatch (CAD) are all accessed via the secure CFA WAN. Weather and analytical tools also come down the IP tube. These are all easily routed to the projectors or PCs. Comms to the field are conducted on tried and tested RF. The aircraft comms gets particularly noisy but are

vital to effective fire suppression.

Whatever their failings, the old school methods do still work, and everyone can understand it without needing a training session on how to drive a new gizmo every week. Professionally, I'd love to see more tech in there, but I do understand the organisation's cultural and budgetary constraints. It's a big institution with a lot of ongoing demands for infrastructure, equipment and staffing requirements.

### What does this mean for CX readers?

Emergency services organisations are always reviewing and upgrading their systems. As highlighted above, there are opportunities for AV integrators to update and maintain existing setups.

For the adventurous, there is some prospect to propose newer approaches to your district or regional centre. How much traction you'd get is another matter and large bureaucracies do move slowly. Budget limits are always an issue but, when they do upgrade, it will likely be major. Install opportunities might be a slow-burn affair but are worth it when they come up. Keep an eye on the tender pages.

Some of the structures and approaches outlined above might also be handy for your organisation. I can see many parallels with live production work and emergency management, not the least of which are learning to stay calm and make time critical decisions under great pressure.

If you live in a rural or peri-urban area, perhaps consider joining as a volunteer with a local emergency service. You can get to practice your C & C skills in real-time and maybe even get some joy from giving to your community, both locally and wider. You won't have to sell your soul to get some basic control here...

*Disclaimer: The views above are entirely my own opinion and are not the official position of the CFA or any other related agency.*

# OSC - OPEN SOUND CONTROL

by Simon Byrne



**MIDI (Musical Instrument Digital Interface) was released in 1983. It is a technical standard that describes a communications protocol, digital interface, and electrical connectors that connect electronic musical instruments, computers, controllers and related audio devices for playing, editing and recording music.**

MIDI is useful in live event production - for example, lighting desks will receive MIDI timecode to play out a light show, and MIDI triggers are used to fire off effects, change sound desk scenes and so on.

MIDI does however have limitations. It really was designed for the purpose of controlling electronic musical instruments, not production equipment, and it is nearly forty years old. Therefore, the commands available are limited, and the resolution for most things is limited to 127 steps.

You might think 127 steps is enough but quite often it is not. For example, say you were controlling a PTZ camera's pan with a MIDI controller. The typical pan in a camera is 350°.

That means the single smallest movement you can do is nearly 3° (350° divided by 127). You simply cannot control the camera smoothly with such poor resolution.

Lastly, MIDI was not really designed for use over IP networks, so third-party apps have to take care of this, which occasionally leads to compatibility problems.

Enter Open Sound Control, otherwise known as OSC.

Developed by the UC Berkeley Centre for New Music and Audio Technology and released in 2002, OSC introduced a robust communications method to remotely control media and other digital processes.

OSC is built on the User Datagram Protocol (UDP) networking protocol. Before we get further, I should explain the difference between UDP and TCP.

User Datagram Protocol (UDP) and Transmission Control Protocol (TCP) are both core components of the internet protocol suite.

The primary difference between UDP and TCP hinges on the fact that TCP requires a three-way handshake when transporting data. The sender asks the receiver to start a connection, the receiver responds, and the sender acknowledges the response and maintains a session between either end. For this reason, TCP is reliable and can solve issues of packet loss and ordering. If a packet goes missing, it is re-sent because both ends know what has made it through successfully through error checking.

UDP, on the other hand, starts without requiring any handshake. It pushes out data regardless of any bandwidth constraints, making it speedier, but riskier. Because UDP doesn't support retransmissions, packet ordering, or error-checking, there's potential for a network glitch to corrupt the data en-route. The main benefit for UDP is that the data gets to the receiver/s much more quickly

because no handshaking is required. Most streaming protocols are UDP.

This means that OSC applications can send data using UDP to other hosts on an IP network without prior set-up of specific channels or paths, making OSC inherently networkable and so very easy to use via local networks and the Internet.

If you want to update yourself on show networks, check out my article in CX118 (link below).

With OSC you can transmit multiple data types. It uses a human readable, URL-style address format and can send data in forms of words or numbers. OSC also includes a picosecond-resolution timestamp, down to 0.000000000001 of a second, which is more than adequate for live events. The data transfer rate of OSC is only limited by your networking hardware and comfortably sits on Gigabit networks.

A great advantage of OSC is that there is no overall fixed scheme to define or restrict the set of possible messages, which is the case with MIDI. A second advantage is that older protocols can be easily translated to and from OSC. Finally, OSC messages are self-descriptive. Just by looking at the text of a message, you can tell what it is for.

So, for example where a note-on MIDI message is a cryptic series of numbers: 1001 0011-0100 0101-0100, an equivalent OSC message would be: /Keyboard/MIDI/Channel\_1/Note\_On, tt: "ii", 69, 79.

As OSC messages are designed to be sent over a network, you need to define where you want to send your message, and what the message contains.

You must define the following things:

**IP Address** – The IP address of the device where you send your message. All devices on your network must have a unique IP address. IP address on a local network usually start with 192.168.x.x. In some cases, you can use broadcast addresses. That is, you

broadcast the OSC data to every device on your network and only those that are listening on a particular port will act on it. You must be very careful doing this though. In a poorly planned network, you could easily flood it and performance would suffer greatly.

**Port** – The port number is like a box number for an IP address. Say you have a block of 50 apartments at 100 Smith St. The apartment numbers would be 1 to 50 at 100 Smith St. That is what ports numbers are to an IP address. Therefore, you send your OSC stream to an IP address on a particular port number, and the receiver must be listening on the same port number otherwise the stream will not get through. This could basically be any number, but a lot of ports are reserved for other purposes. Use a 4- or 5-digit number to stay out of the range of most common ports. For example, 8888.

**Address Pattern** – This usually looks like a URL. It is used to differentiate between different messages you are sending on one port.

Example: /your\_lighting\_desk\_name/scene\_number 27 /your\_sound\_console\_name/channel 5 volume 0.7

So, what can you do with OSC? A superb example is DiGiCo's implementation on their SD consoles. You can define your own OSC messages in the console software and use the console itself to send these messages via the console's Ethernet connection to the device you want to control. The connection is bi-directional, so the remote device can also update the console's generic OSC controls if settings are changed on the device itself. For example, if you have a tracker on the talent onstage, using OSC you can dynamically position their voice in an immersive sound system such as d&b audiotechnik's Soundscape or L-Acoustic's L-ISA.

Lots of equipment and software has implemented OSC in all budget ranges. Lighting consoles, sound consoles, media servers, Pro Video Player, Disguise, Qlab, Resolume, Ableton Live, TouchDesigner,

**“Conceived and used by Deadmau5, OSC/PILOT is a bi-directional control surface application originally built as a performance tool for digital artists and musicians.”**

MaxMSP, Reaper, ProTools. The list is endless and keeps growing and for equipment that does not support OSC, third parties often make bridging utilities such as Daniel Büchele's OSC bridge for Black Magic ATEM switchers (link below).

Want to have a try building an OSC controller? If you are an iOS user, you can install the dirt cheap TouchOSC which lets you create a customisable OSC (and MIDI) controller on your iPad.

However, the exciting new controller is OSC/PILOT. Conceived and used by Deadmau5 (the Canadian electronic music producer, DJ, and musician for our older readers), OSC/PILOT is a bi-directional control surface application originally built as a performance tool for digital artists and musicians.

Running on Windows, ideally with a multi-touch display, you can quickly build some very impressive and powerful user interfaces. In edit mode, widgets are dragged into workspaces and can have parameters adjusted to customise their look and behaviour. It supports 32 workspaces and even supports NDI which means you can bring video content onto your workspaces.

OSC is a nice protocol that is well designed for pulling together show networks.

**Touch OSC - iPad OSC and MIDI Controller**  
<https://hexler.net/products/touchosc>

**OSC/PILOT - OSC and MIDI Controller on Windows**  
<https://oscpilot.com/>

**ATEM OSC - OSC Software bridge for Black Magic Designs ATEM switcher**  
<https://medium.com/@danielbuechele/atemosc-osc-bridge-for-controlling-atem-switchers-34e2182165a2>

**Mission Critical Show Networking – CX118**  
<https://www.cxnetwork.com.au/mission-critical-show-networking/>



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# HARMAN's Vision of Our Control

by Jason Allen

**Jamie Trader, Vice President, Video and Control at HARMAN Professional spoke with CX about where their R&D budget has been going, their view of the market, and what we can expect to see from HARMAN in the AV control space this year. We also got CEO of Australian distributor MadsionAV, Ken Kyle, to weigh in on their increased local capability to support HARMAN technology.**

**What new capabilities are your customers asking for in terms of control systems? Are the requests similar across sectors (corporate, education, health) or are they different?**

Control system users are obviously trying to synthesise a now-standard software-based communications experience with the physical environment, voice enablement, variants of AI, and meaningful analytics. And simultaneously, the expectation is that this synthesises into a technology package that can be easily defined, purchased, installed, and supported. Affordably. They want options in how they pay for capabilities. They want options in how they provide for, or host, those capabilities. And they want new flexibility designed into

the architecture to ensure that unexpressed needs can be fulfilled at any point later, by various contractors with various programming skills. We're asked more and more for native interoperability with all platform providers and to deliver this through partnership-driven development efforts.

And simultaneous to all this, we're frequently asked for single turn-key solutions that deliver on the whole with minimal-to-no need for meddling with the parts.

This paradox is seen in every sector where people need sophistication and simplicity, software flexibility and hardware dependability, cloud-enabled configuration enhancements and stand-alone configuration

capability, capitalised cost structure and opex subscription models.

This is a great time for manufacturers like Harman Professional who have deep competencies in control technologies and a long heritage of serving successful possibilities, to continue synthesising new possibilities that address the entirety of this modern paradox.

**Touchless control and BYOD have become the hot control capabilities due to COVID. Where are Harman at in relation to implementation? And is this the death-knell of the shared touch screen?**

Harman Professional has always led the market with BYOD control capabilities, dating back to the 90s with AMX's G3 Web Control and later on with Harman's various HiQnet mobile applications. The "OD" part of "BYOD" was definitely a different device in the 90s than it is today, but our technology continued to evolve to provide ample methods for democratising control to all the rooms' users, regardless of their proximity to the dedicated appliance at the end of the table.

Today, solutions like our TPControl BYOD product is perfect for environments where BYOD is desired as an extended capability of the dedicated touch panel in the room, or even in spaces where dedicated touch panels are not suitable. With cross platform support,



Ken Kyle

### Ken Kyle, CEO, Madison AV

MadisonAV won the distribution of HARMAN's AMX video and control products in Australia a year ago. What have been the key learnings and changes within the business as a result?

When MadisonAV won the HARMAN business, we immediately set about growing our team and capabilities to ensure support was available for our customers. This included growth in our customer service, technical support, sales, product management, and marketing teams. This growth was well underway when COVID hit, though the proposed structure and associated growth was not fully realised because of COVID, and everything that came with that. The plan is still very much a work in progress, and we're currently back in a recruitment phase, having deferred some elements of this in 2020. We did manage to complete our new support facility early in 2020, along with an on-line customer self-service portal, and staff it accordingly, with the local customer support and service being an important ingredient in the HARMAN offering.

Our planned instructor-led training program was also delayed, although we did manage to kick this off in Sydney and Brisbane late in the year. We expanded customer service, marketing, product management, and created a Technical Sales Support Team, working closely with sales to offer services to our partners including systems design, EASE modelling, and any other pre-sales technical support that is required. This has been an important addition to the business and a real value add for our partners.

We've also re-built our Sydney facility to house the expanded team and create an "experience centre" where HARMAN and other MadisonAV products can be viewed and demonstrated downstairs in our Silverwater facility.

These are the major changes to the business, and I think we've come a long way in establishing MadisonAV as a full solutions supplier, with the pre and post-sales support to back it up, rather than a supplier of infrastructure solutions with some add on products to compliment, where we were previously positioned.

Our current recruitment drive is mainly focused on sales and business development resources, and our expansion in this area will see a local sales force spread across a greater geographic area, specifically servicing all market tiers. This will happen in conjunction with the realisation of a new product roadmap that has been in the works in HARMAN for some time, so we feel the timing is right for expanded coverage. We're focussed on improving the support, training and accessibility for AMX products, to ensure our end users and partners get a great experience from AMX products.

its simple for users to simply download the app, scan the QR Code, and users are up and running with a fully featured AMX control interface.

As we find more facilities bringing software-based communication platforms to the centre of their technology designs, like Zoom and Teams, we find the technology footprint dramatically decreasing. Some room's capabilities won't always demand the presence of dedicated touch interfaces, as the majority of the meeting technology is within the platform app itself. With more and more customers choosing to leverage their existing fleet to run these apps, we recognise that fleet itself AS the device in BYOD. That is why we work with companies like Zoom to easily enable their 'Room Controls' interface to natively control AMX devices.

COVID is as much the death knell for the shared touch screen as it is for the light switch. It isn't. There is always need and purpose for dedicated, always on, always available, touch interfaces. The question is more about which rooms deserve or demand them, and in what ways they might act as other sensory interfaces to add intelligence and simplicity to the room.

**What particular areas has Harman been concentrating its R&D spend in? For example, we haven't seen anything new**

### out of BSS for a while - any news there?

Harman Professional has made significant investments in the entire R&D and operations organisations to design and manufacture the industry's most comprehensive unified AVLC system. An unparalleled effort in the marketplace, we're unifying the underlying operating systems, control protocols, DSP framework, transport formats, and security architectures of our signature brands, whilst also pulling all of the configuration and management software used across those brands into one user-centric, work stream defined application suite.

This is in addition to the major investments we continue to make in our individual brand platforms. Waveforms, drivers, optics, light engines, compression algorithms, and more.

While the pandemic has been very economically challenging for everyone in our market, we've been fortunate to have the agility and financial strength to increase our R&D investments during this time. The acceleration here compounding on the investments and energies over the past couple years is soon to produce the tangible results our dealers and end customers have come to expect from us. As a wave of new products from all of our iconic brands, including AMX, BSS, Crown, Martin, and more begin to emerge, I'm confident we'll both satisfy and surprise.

### We're seeing more and more 'green' line items in budgets, like carbon costs and environmental impacts as a cost centre. How would a new control system address this?

New control architectures emerge greener in several ways. On the product side, you'll find an increased shift to software collocated on existing computing platforms and decreased power consumption on dedicated appliances. But the real impact comes from the user application side, where you'll find rooms leveraging control systems' increased sensory technology to better synthesise environmental comfort with demand. Tracking demand and fulfillment, reporting it, and enabling cost centre owners to quantify impact and savings in a meaningful way that results in agency rebates or discounts on energy performance. Control systems have provided the capability to do these things for decades, but it's now really about the simplicity in how these systems communicate with building systems and how businesses are meaningfully incentivised to perform leaner and greener.

### Cloud capability is now a must for the deployment and maintenance of any AV system. How is this implemented while staying secure?

Standard ISO 27000 series principles. Protecting confidentiality, integrity, and availability of data and service means you

employ layered defense of your server, wherever it may be hosted, and you deploy AV technologies supporting rigid encryption protocols to ensure safe communications between it and the server.

**With budgets tight for the foreseeable future, use analysis of AV equipment to extend life cycles has become incredibly important. Is this likely to be baked-in to all products?**

Most reputable AV products have already had this baked into design for the past couple of decades. Eco modes, standby modes, low power modes etc, have been configurable options aligning real utilisation with real savings behaviour in real time. Many Higher Ed consumers had found that products like AMX's Enova DVX All-In-One presentation switchers had self-funded in an incredible 1.3 years off of power savings alone.

Does this equate for all products? Obviously not. There is a diminishing return on use analysis. As power consumption lessens, LED lifespans exceed resolution standards, and more devices load balance capabilities, there's less to optimise.

But the real question is HOW manufacturers will look to simplify promoting the behaviours they exhibit. How they quantify and advertise their savings for you versus just delivering the savings and extending analytics to management software.

**What 'IT Manager Friendly' features need to be introduced into AV control to assist IT departments in feeling comfortable working with AV? For example, many are wary of hi-res video on their networks - how do we help them out?**

IT Managers aren't looking to "feel" comfortable. They want validated technology that conforms to their security posture, can be managed with their tools and their people, and has high reliability and low friction.

That is at the foundation of AMX's SVSI successes. It's not about building a product that we can get an IT Manager "on board with". It's about building a network product that employs all standard networking protocols, allows them to manage service quality in 100% conformity with their broader network QoS strategy, is defensible through standard authentication and encryption methodologies, allows them to diagnose and troubleshoot with the standard suite of network traffic tools they already have built a career using, and ultimately just works.

Remember, we're not putting hi res video on their network. We're putting data on it.

Sure, it could potentially be a lot of data. But network math is straightforward – that's not the problem. The bigger issue is when manufacturers don't understand or value basic data packet methods, like VLAN tagging; the ability to designate each packet for a specific VLAN, thereby

natively separating, say, video data packets from control data packets within the single connection, and more importantly, keeping all of that traffic routed away from the critical business data traffic that IT Managers are employed to protect.

SVSI has worked with every major network switch provider and together we've evolved one another's products to a degree of unparalleled performance so that conversations with IT Managers aren't about educating them on AV peripherals – they're about network appliances and network performance.

**Some control systems have gone completely software-based. What do you think of this approach?**

The better question is, what do completely software-based control systems adopters think of this approach?

There is, no doubt, an expectation in the market for options in cost modelling, flexibility in topology, and more. But there also remains an expectation for reliability, high availability, and zero-latency performance. And in ultra-high security environments, even dedicated isolated appliances.

It's part of the paradox I discussed earlier. It seems contradictory to need or want both sets of expectations met. But they both can. It's not likely if the approach is taken as a pure hardware play, or a pure software play. As a centralised on-premises server play, or a pure cloud-hosted server play. As a pure one-time CAPEX procurement play or an OPEX SaaS play.

What will solve for all the expectations will certainly be a platform that provides options.



Jamie Trader

**“This is a great time for manufacturers like Harman Professional to continue synthesising new possibilities that address the entirety of this modern paradox.”**



# Sometimes it all gets too much...



The *Support Act Wellbeing Helpline* is a free, confidential counselling service that is available to anyone working in Australian music who needs to talk to someone about any aspect of their wellbeing.



THE SUPPORT ACT WELLBEING HELPLINE IS MADE POSSIBLE WITH THE SUPPORT OF:



# PHAROS GOES WEST

Portal Veil

## Lightmoves controls Sydney's WestConnex

Part of Sydney's huge transport expansion plan, Transurban's WestConnex will provide drivers with a 33km road network once completed. Officially opened on the 4th of July 2020, the WestConnex M8, part of the WestConnex project, sees 9km of tunnel in each direction from St Peters Interchange to Kingsgrove.

In a joint venture with Samsung, the project called for a phenomenal scale of decorative lighting. This included lighting the 9km of tunnel in each direction, as well as the entryway, exits, and surrounding landscape. Lightmoves were the clear choice for CPB Contractors, the Head Contractor on the project. With over 30 years' experience in LED Feature Lighting and Lighting Control, Lightmoves were able to design custom solutions to each of the architectural lighting installations that not only exceeded specifications, but also saved time and money during installation thanks to some ingenious engineering.

The WestConnex M8 saw five separate lighting installations to be completed, on a scale that only Lightmoves could manage. Originally conceived by Hassel Studio in conjunction with lighting designers Lighting Art + Science, the project consisted of some 2700 LED lighting fixtures to be installed, controlled and commissioned across four separate areas over the 10 kilometres of the project.

Lightmoves has been working on the WestConnex M8 project for nearly four years. From the initial design concepts by Lighting Art + Science, and through a Design and Construct process with CPB, the Lightmoves team have been there. This continued through the documentation and manufacture stages, followed by delivery, commissioning and programming. The project involved a serious investment for the Lightmoves team, who helped to deliver the ultimate result for the project. The architectural feature lighting system was delivered on time, on budget, and fully functional on opening night.

### Kingsgrove Dives

Kingsgrove Dives is the western end of the M8 tunnels in Kingsgrove. Along both walls

of the entry and exit over 500 units of Space Cannon's CD Linear S RGBW's linear LED fittings were supplied. Various lengths of the Linear S have been installed inside the 140 alcoves, decorating both sides of the entry and exit. This simple design creates colour-changing pillars of light as drivers transition into and out of the tunnel.

### Tunnel

Throughout the 9km of tunnel in each direction, decorative direct-view LED lighting is scattered at various lengths to break up the monotony of the tunnels for drivers. A customised version of Space Cannon's Glowline Pixel Bar was the perfect choice for fixture. With over 1500 fixtures supplied, there was no room to have issues with installation on site. As part of the service Lightmoves assembled, fitted-off, tested, and programmed every fixture before it arrived on site, including the custom mounting brackets. This saved the installation contractors countless hours as once the fixture arrived on site it was as simple as plug-and-play.

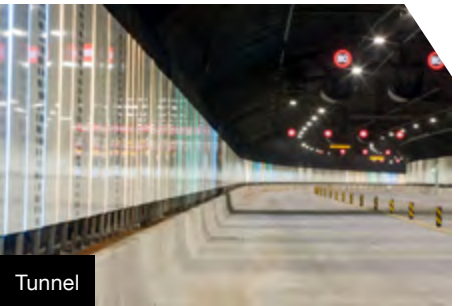
### Portal Veil

A stunning piece of architecture, the Portal Veil is the entry and exit to the tunnels at the St Peters end of the WestConnex M8. The striking veil of hundreds of linear panels have been lit with Space Cannon's CD Linea Ms. Working closely with Space Cannon, each CD Linear has been mounted in a custom-designed extrusion, providing consistent angles when the light strikes the linear panels.

### St Peters Interchange

The bridges throughout the St Peters Interchange are adorned with Space Cannon's Pixel 8 RGBW direct-view fixtures. Each of these is mounted in a custom channel specifically designed for ease of installation and maintenance, as some of the luminaires are 25 metres above ground level. These Pixel 8 fixtures are perfect for outdoor use, and were specifically developed for the WestConnex project. Each pixel can be individually controlled, spreading patterns of light across the overpass. In addition to the Pixel 8 fixtures, eighteen of the support columns under the bridge are grazed with light from over 360 WE-

Kingsgrove Dives



Tunnel

EF fixtures, creating a beautiful wash of light perfectly covering the entirety of each pillar. The combination of these fixtures results in a beautiful transition for drivers in the St Peters Interchange.

### Lighting Control System

Such a large project of this scale, footprint, and sheer number of fixtures required the best-of-the-best control systems. As each luminaire is uniquely addressed for individual control, the project called for a lighting control system with some serious power behind it. The Pharos LPC 30 was the obvious choice for the project after a vigorous testing process.

### CONTROL

In only a 1RU form factor, the Pharos LPC 30 delivers DMX over Ethernet via the highly secure Tunnel fibre backbone. This fibre network also transports data for vision cameras, evacuation, tunnel audio, speed and time interval cameras and signage systems to name just a few of the parallel services. The complex network infrastructure required VLAN routing of unicast Art-Net data originating from the LPC 30, delivered to 47 physically separate four universe DMX512 decoders.

A second redundant LPC 30 was supplied as a fail-over to keep the architectural feature lighting system running no matter what else happens along the way. The redundant unit is located in a totally separate location with active monitoring of the main unit, and is coded for seamless transfer if required.

As well as the lighting control data systems all of the luminaires (except for the Bridge Pier floods) required Extra Low Voltage (ELV) feeds. Lightmoves fabricated and supplied enclosures to provide all the ELV power supplies and their terminations with high quality protection in both the tunnel and near marine environments in which that they are working.

### COMMISSIONING

Commissioning for the project had to be completed in a very tight window. By the time the construction and civil works were completed, there was only a day or two before the project opened to traffic. Needless to say, Lightmoves were able to complete all programming before the deadline.

The commissioning process was rapidly completed thanks to Pharos and the network structure. The commissioning engineers could remotely access, test and control the system whilst inside the tunnel or out in the acreage of the St Peters Interchange.

**CABLING**

Cabling systems are usually considered dull and boring, and just a necessary expense. For this project however the plug-and-play cabling system was the unsung hero. It delivered a control network of nearly 30 DMX universes in underground and high-level bridge

environments by installation and cabling contractors who had never heard of DMX.

With the plug-and-play cabling system and the long DMX cable feeds there was not a single solder joint or field termination. Every cable was pre-terminated, specially manufactured as Low Smoke Zero Halogen in line with their operating environments. All that was required were the usual mains power terminations at the ELV power supplies.

This solution was designed and developed by Lightmoves and Space Cannon with their unrivalled experience in DMX, LED and ELV

installations. It delivered the architectural feature lighting system with the minimum of field work and the minimum points of failure, in what would otherwise have been a very long winded, painful and labour-intensive installation and commissioning process right at the very busy end of the project.

After many years of work and countless hours of time invested in the project, it's been a momentous project for the Lightmoves team to be a part of. The WestConnex M8 is another spectacular architectural lighting installation completed by Lightmoves that drivers can enjoy for years to come.



Pinjarra Road Bridge



Subiaco Heritage Gates



The Precinct, Mount Pleasant

**Light Application – Controlling The West**

Perth's Light Application is providing their customers with superb project monitoring and remote access to lighting control thanks to Pharos Cloud.

Matthew Bancroft, Technical Sales Support at Light Application had this to say about the benefits of Pharos Cloud for his customers:

“Pharos Cloud is the perfect value-add service for providing remote monitoring, maintenance and scheduling of existing or new projects with Pharos Controllers.”

“By simply adding a 4G modem or connecting the controller to the client’s broadband internet connection, the secure cloud service integrated into the Pharos controller’s firmware allows for high level online diagnostics and a simple end user interface for triggering and scheduling.”

“The ability to add multiple controllers

running different projects to the cloud dashboard and have them simultaneously triggered ensures that no matter the complexity of the project, it can be interfaced for control in a simple format for the client.”

“So simple in fact, we are no longer providing industrial PCs for sites with Pharos controllers and a client requirement to remotely connect and control their sites!”

“With Pharos Cloud being so easy to commission and the simple web based portal for clients who can use a phone, tablet, laptop or desktop computer from any internet connected location in the world, it was an obvious choice for us to provide Pharos Cloud as a viable solution for our existing and future clients. “

**Subiaco Oval Heritage Gates**

The Subiaco Oval gates are usually unmanned, so 3E Consulting Engineers

specified a Pharos LPC with Pharos Cloud for remote monitoring, as well as an onsite 4G modem. Now it can be fully managed remotely, with a custom dashboard for changing the display.

**Pinjarra Road Bridge**

The lights on the Pinjarra Road Traffic Bridge have proved a hit since they were first turned on. The City of Mandurah now allows charitable and not-for-profit organisations to book the lights for a day to help promote their special events or appeals.

**The Precinct, Mount Pleasant**

Being located on a major intersection, it was essential to be able to remotely control the lighting on The Precinct façade. Easy overrides mean that if there was ever an incident at the junction or a complaint of a distraction to road users, changes can be made immediately.

# Storms & Salvation Brought to Life by DiGiCo's SD12 for The Flying Dutchman Opera



**August 2020 saw a magnificent production of The Flying Dutchman, Richard Wagner's fifth masterpiece, brought to Lithuanian opera fans for the very first time. Staged in a unique open-air setting by the Klaipėda State Musical Theatre and featuring leading Lithuanian soloists including Sandra Janušaitė, the event became one of the most celebrated musical productions of the year, selling out all of its socially distanced 1,000 seats to lucky spectators. Dual DiGiCo SD12 96-channel consoles with two SD-Racks and D2-Racks were selected by one of the largest audio rental companies in the Baltics, NGR Service, to bring the magic of this one-act opera to life.**

Fitting its original theme, the opera production took place on the slipway of Paul Willy Lindenau shipyard complex in Klaipėda, with its colossal structures and hoists, as well as frequently changing weather conditions, presenting the NGR team with some major challenges right from the start.

"The setting in the historic cruise ship terminal made for a unique and spectacular location, but it also meant dealing with rain and winds of up to 20 m/s whilst thinking of how to make the orchestra and soloists sound as natural as possible, as this would be staged in an acoustic concert hall," reminisces NGR's FOH Engineer, Tomas Ždanovičius. "On top of the weather challenge, we also had to deal with

constantly moving actors across a 50-metre stage, or even outside the stage at times, as well as special effects such as falling water and a real-life ship appearing during the performance. There were definitely one or two 'firsts' for us in this production."

In order to deal with such a challenging odyssey, NGR chose the DiGiCo SD12 console, which offered their team the ease of operation, fast function selection, and "without doubt, the best sound of any console currently on the market," adds Ždanovičius.

Deploying their best technical minds and top-quality sound equipment on the site allowed the team to fully realise the creative production ideas of Concept and Artistic Director, Dalius Abaris.

"When it came to sound, it seemed that everything was against the NGR team," says Abaris. "On location, the sound engineers repeatedly analysed and evaluated wind speeds as well as rigging positions of the sound system depending on where the audience would sit, which would sometimes change on a daily basis due to the latest COVID restrictions. One day we had one ground floor layout, the next day another."

Impressed by the professionalism the NGR team showed in the face of such adversities, Abaris explains how the team worked relentlessly to ensure they could transmit every sound to each member of the audience.

“Another complexity was, of course, the stage size,” he adds. “This was a big challenge, not just for the sound team but also for the performers. When people are separated by over 40 metres distance, the monitoring systems visibility and relationship with the conductor all have to be watertight, so to speak, not to mention the main PA and the delay systems.”

NGR deployed two SD12 consoles, with the main one serving the soloists, orchestra, and special effects and submixer return groups; the other was used as a submixer for the choir’s 48 personal headsets. In total, between two consoles, 146 channels were utilised, not including FX returns.

“The scale of this production was just immense, and I didn’t hear a single artist saying that they felt uncomfortable singing,

which is a major credit to the team’s abilities,” shares Abaris. “The installation of the sound equipment was a long process, as the team had to rig the system on an over-a-century-old shipyard construction. They had to measure everything very precisely before putting up the three main PA clusters and the delay lines. The panning of the soloists was so accurate that the audience’s attention was focused on where the sound was coming from. It was definitely a feat to behold.”



## 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



Tomas Ždanovičius

**“The setting in the historic cruise ship terminal made for a unique and spectacular location, but it also meant dealing with rain and winds of up to 20 m/s whilst thinking of how to make the orchestra and soloists sound as natural as possible”**



The entire set-up included 70 wireless systems for the opera performers with omnidirectional headsets, and a further 50 systems for the orchestra with clip-on lavalier mics and more. DiGiCo's SD12 became invaluable when dealing with the soloists, who were in seven fixed positions across the stage, which was configured in 'layers' of around 50 metres in width.

“This was all dealt with by having pre-programmed panoramas in different Snapshots, with manual pan movements as necessary,” explains Ždanovičius. “The audio material for the entire show was recorded in multitrack and having the ability to expand the console with DMI cards was very convenient.”

Speaking about the functions on the SD12 that were particularly useful in this complex production, Ždanovičius notes the importance

of the ergonomics of the console, as well as the easy accessibility of the worksurface, which helped him react fast. “Additionally, it was useful to be able to arrange the layout of the console in any way needed, as well as having all necessary channels next to each other - independently of the input list positions. Finally, having two separate touch sensitive screens made my work as fluid as it can ever be,” he adds.

Broadcast live on Lithuanian national television, LRT (Lietuvos radijas ir televizija), Wagner's operatic feast passed with flying colours and was met with standing ovations by the fascinated audience.

“This was probably the first opera in Lithuania where there was no criticism from musicologists, critics or sound professionals - certainly that I'm aware of - so it was a

complete success all the way,” states Abaris proudly.

“Working with the best orchestra and leading soloists of Lithuania requires the best sound quality, because everyone, from production directors to choir members, knows how the orchestra should sound,” concludes Ždanovičius. “This is why DiGiCo consoles are chosen for these types of events - we can always trust the equipment. We particularly valued the system flexibility we gained with DMI cards: in this particular production, with the help of DMI cards and UB MAD1 we could split all the inputs to the OB Van, multitrack recording (main and backup), submixer and FX computer, which made the entire workflow seem like a serene ocean breeze amidst the storms and salvation of this magnificent production.”



Andi Toma and Martin "Lucky" Waschkowitsch

# MEYER SOUND SPACEMAP GO EXPANDS CREATIVE PALATE FOR MOUSE ON MARS

Electronic duo explores spatial sound at Bewake Studios in Berlin

**Bewake Studios in Berlin has become the first recording facility to install a multichannel monitoring system fully outfitted with Spacemap Go, Meyer Sound's breakthrough tool for spatial sound design and mixing. By offering this unique capability, Bewake promises to become a magnet for electronic musicians and sound artists seeking a laboratory for developing spatial sound designs that can be quickly scaled up for live performances in clubs, galleries and festival venues.**

The installation of Spacemap Go was prompted by German electronic music icons Jan Werner and Andi Toma, who have transcended genres and redefined artistic conventions since 1994 with both their Mouse on Mars duo as well as individual projects.

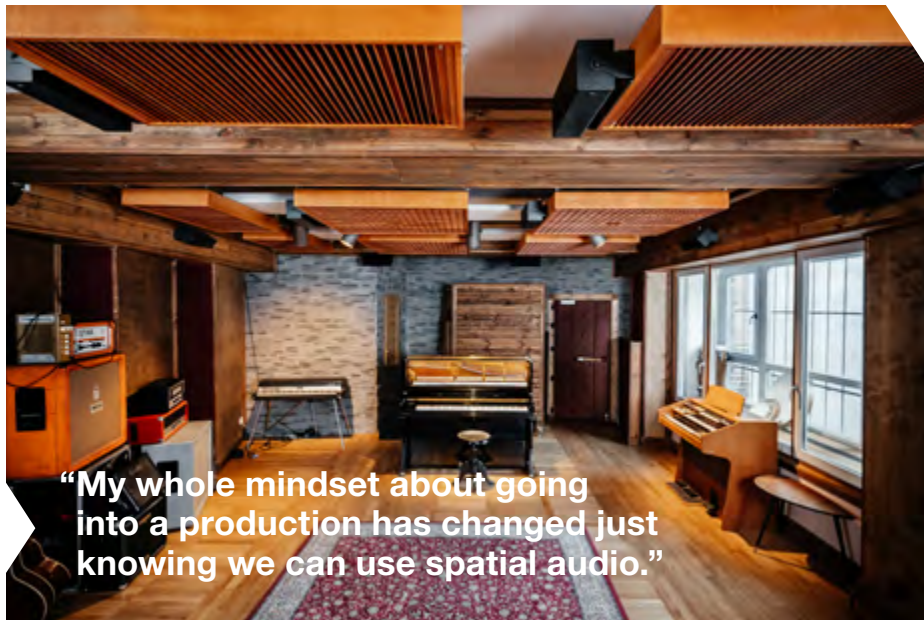
They have been in residence at Bewake Studios since late 2018, and have occupied an exclusive sub-rented space and operated under the moniker Paraverse Studio. Their facility has a separate connection to the 50 square metre main recording room — where

Spacemap Go is available — which is shared with Bewake's other clients.

"Andi and Jan first experienced an earlier version of Spacemap Go at Moogfest two years ago, which started an ongoing relationship with Meyer Sound," notes Adam Kesselhaut, the studio's co-founder and managing director as well as a producer and songwriter. "That eventually led to the installation of Spacemap Go here. Because of the virus restrictions they have mostly been using it for their own projects, but they have been developing content so we expect they will use that in small events, inviting a few select people. I know they are really itching to get going with Spacemap Go, to make some cool, crazy stuff and get other artists in here to experience it."

Studio co-founder and producer/engineer Martin "Lucky" Waschkowitsch found time to experiment with Spacemap Go and the results exceeded his expectations.

"To be honest, I was surprised that it works so well," he says. "I was expecting phase issues as you walk around the room, but I didn't hear them. You point at the sound on the screen,



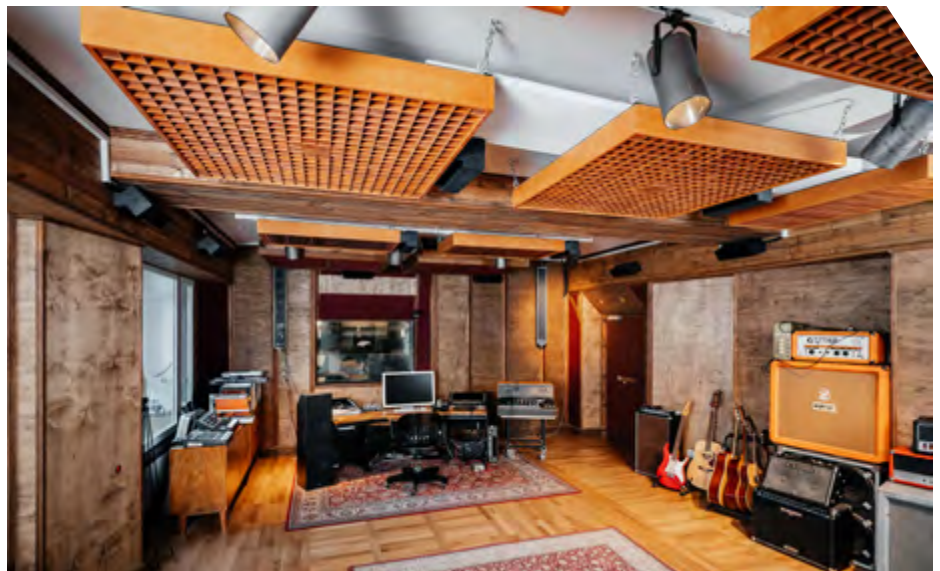
**“My whole mindset about going into a production has changed just knowing we can use spatial audio.”**



Mouse on Mars



Martin “Lucky” Waschkowitsch and Adam Kesselhaut, co-founders of Bewake Studios



and where it is actually happening in the room is far more accurate than I would have thought. The effect is really spot on.”

The Meyer Sound loudspeaker complement comprises 14 UP-4slim compact self-powered loudspeakers bolstered by two USW-210P compact subwoofers for potent low end. Spatial mixing is effected by two Galileo GALAXY 816 Network Platforms under the control of the free Spacemap Go app for iPad. The system was installed and commissioned under the supervision of Ianina Canalis, Meyer Sound’s Berlin-based application architect, spatial audio specialist.

“For us it really makes sense to have access to a spatial sound setup in the studio,” explains Jan Werner, speaking on behalf of the Mouse on Mars duo. “You don’t want to go into a venue with what was a stereo mix and then have to take it all apart and adjust it after you get there. You want to start mixing spatially in the studio, so you are listening that way from the beginning, in the eventual environment for the music.”

Werner cites their current focus on developing

a spatial performance at the CTM Festival scheduled for 2021 in Berlin, both online and in-person. “In the studio we have 16 speakers in a room of about 50 square metres, while at CTM the venue will be about 1,600 square meters. But Spacemap Go intelligently arranges the sounds being reproduced in the same spatial coordinates, even if you are using many more loudspeakers. The scaling works very well, so we expect to have everything ready even in the short time allowed to prepare on site.”

Werner also likes the Spacemap Go interface and the way it works seamlessly with their Logic DAW via the OSCar plug-in. “It’s very unpretentious,” he notes. “It’s hands-on so you don’t get lost in some esoteric blur. It transcends itself as a tool, and whatever you want to do with your artistic vision, it will help you do it.”

“Just having the system here makes us deal with sound differently already,” he continues. “It’s a new freedom you have inside your head. I feel like this whole palette of formats has just exploded. Now I know I can open up sounds in space. My whole mindset about

going into a production has changed just knowing we can use spatial audio.”

Although many public performances are on hold, Bewake’s “Lucky” Waschkowitsch believes that the interim period will provide time for more creativity-in-waiting at his studio. “I think this will be highly successful, and you will see musicians and sound artists creating their spatial mixes in the studio, much like cinema sound is mixed for theatres. It just needs the courage to believe in it, and for venue owners to start equipping their rooms with this system. We may be ahead of the curve for now, but I believe it will happen.”

Bewake Studios ranks among Germany’s leading boutique recording facilities, offering a combination of state-of-the-art digital technologies coupled with an impressive inventory of vintage analog consoles, signal processing and tape recorders. The studio is available for private demos to experience Spacemap Go. Those interested in scheduling a demo can contact [marketing@meyersound.de](mailto:marketing@meyersound.de)



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# VUEPIX INFILED DIGITAL STAGE

by Helaina Keeley and Aaron Cleland



Helaina Keeley

## The establishment and direction of the Aotea Arts Quarter was something we had been developing since it was adopted as a strategy by the city in 2016.

Our existing digital offer included the Digital Arts Live programme which showcased interactive digital art works on a screen located inside the Aotea Centre. As an extension of this we identified that siting a large scale outdoor mobile screen in Aotea Square would increase the dwell time of people passing through and enable us to provide an increased level of programming, making the visitor experience richer and more interesting. Our intention was to programme mostly arts and cultural content, intensifying the offer of the arts venues. We also wanted to bring the experience of live performing arts to the public, to perhaps inspire the curious passer-by who may not have considered engaging with activity within our venues. In addition, the mobile screen offered an extension of our venue spaces to clients holding conferences, business events and the like.

Research told us that the city didn't own anything that was comparable with what we

were thinking, and we knew that our Digital Arts Live screen was reaching the end of its projected life span of approximately 10 years. There were however challenges to overcome with the proposed location for the Digital Stage as Aotea Square sits above a car park. These challenges included weight loading restrictions, the need for flexibility due to the regular use of the space for gatherings and events, and consenting obligations including consultation with mana whenua (the local Māori tribal owners of the land the square is located on), as well as noise implications. The portable solution solved these challenges for us and in addition provided the opportunity for relocation through the city centre when major events needed a digital platform.

When we went out to market, it was with these very specific requirements, as well as a focus on the brightness and quality of the picture we needed. Aotea Square is very large and of irregular dimensions and we

ensured these parameters were clear in the tender document. What we found was that there wasn't anything else in the market that was comparable to the solution proposed by ULA Group. The closest we could find were smaller LED screens mounted on the backs of bespoke trailers.

ULA Group partnered with ScreenLED in Poland to provide the complete solution including manufacture of the container, infrastructure, and hydraulics. When we initially looked at what they were proposing, we presumed it would be outside of our budget. Happily, when we started working through the proposal with ULA, it became apparent it was totally feasible, and it was an innovative solution to what we wanted to achieve.

Throughout the design and manufacturing process we worked closely with ULA and were in regular contact. ULA Group sent some of their senior staff to Poland and they were on site at ScreenLED as the Digital Stage was built – they even sent us pictures of the work-in-progress. When the Digital Stage was delivered, the lead of ScreenLED came out to New Zealand from Poland and was here for 10 days working with ULA as we commissioned it. All in all, both ULA Group and ScreenLED were excellent, and we have a great working relationship.



**Helaina Keeley is Creative Industries Development manager, and Aaron Cleland is Creative technologist at Auckland Live and Auckland Conventions Venues & Events. Responsible for the presentation of performing arts, live events, and key conventions activity at a number of prominent venues across Auckland Tamaki Makaurau, Auckland Live is a major contributor to the cultural life and economic development of the city and beyond.**

**Aaron Cleland**

## The Digital Stage is currently deployed in Aotea Square for Auckland Live Summer in The Square.

It is a key component in this public square activation programme being used for live music events, live screening of the 36th America's Cup, DJ sets, and Blob Collective's interactive digital artwork Aotea Symphony, where the public can physically step on activation pads in front of the screen and trigger various animated graphics and sounds.

There are three locations we position the Digital Stage within Aotea Square depending on operational requirements. It is also relatively straightforward to relocate as it can be transported on the back of a truck.

### Set-Up and Operation

One person can get the Digital Stage up and running in 45 minutes. There are two basic components to the process – the hydraulics, then the video and audio. Firstly, the container is levelled with its four hydraulic legs to ensure that the LED screen lifts out of the container properly without scraping the edges. Once that has been done, the top half of the screen comes out and rotates 180 degrees. That's accomplished with a remote control that operates the hydraulics. The top half of the screen is then lowered onto the bottom half

and connected hydraulically. Both halves are then raised up on an hydraulic mast to their full heights, ending up about three metres off the ground. Then two sides fold out like wings, giving you the full 9m x 5m screen.

Inside the container, there is a small control room which houses the broadcast equipment. It can run locally off a laptop, and sometimes we drop in a computer to run interactive art pieces. Most of the time, the screen is running on a fibre connection to the Aotea Centre's control room. This control room or broadcast suite was part of our investment in the asset, giving us broader digital capability across the different venues in the Aotea Arts Quarter, in addition to the Digital Stage. Our scheduling and playout software are all activated from this suite, pushing content to the screen.

When we are running live IMAG in Aotea Square, we run everything from the Aotea Centre's control room. Cameras in the Square link back to the control room's Ross Carbonite video switcher. If we are away from Aotea Centre, we drop in a vision switcher, and it's easy to include live cameras. If it is just a one-shot we need, we have a PTZ camera attached to the side of the screen that can

be manually patched straight out to screen via the Blackmagic router in the container's control room. This gives us a shot of the crowd. People love seeing themselves, it's the most popular thing to have on the screen.

### Brightness and Quality

The brightness (over 5,000 nits) is exceptionally good. We often get comments about how clear the picture is even though the sun is hitting the screen directly on very bright days. Some people are in disbelief - we're very happy in that respect!

### Audio

We most often run audio with the two JBL speakers side-of-screen. When I saw the proposal, I was sceptical that only two passive 12s would provide enough coverage and SPL, but ULA chose well, and they do a great job.

We have a distributed speaker system in the Square on a delay matrix which we use for large events, but the screen runs most of the time with just its left-right pair.

### Support

The on-going service and support from ULA Group has been exceptional. They are one of the best companies I have dealt with. When things inevitably go wrong with technology, ULA Group go out of their way to resolve things as quickly and efficiently as possible. That sort of support is hard to find these days.

## The Specs

**The VuePix Infiled Digital Stage (aka The Auckland Live Digital Stage) is a custom-designed mobile solution provided by ULA Group. The container and hydraulic mechanisms were built by Poland's ScreenLED. It is essentially a transportable shipping container fitted with a 9m x 5m LED screen that opens out when needed and folds inwards for storage and transportation.**

### LED Screen

Vuepix Infiled ER Series (Pro)

6.9mm Pixel Pitch

Outdoor Rated IP65

9m wide x 5m high

Resolution: 1296 x 720 px

Total Pixel Count: 933,120 pixels

Internal Hardware Rack and Control Room

NovaStar ProHD processor running main and redundant feeds

NovaStar Multifunction box and brightness sensor

Resident PC, LCD, keyboard and monitor for local control and remote support

2 x Furman power conditioners

1 x Junger Easy loudness monitor

1 x Analogue Way pulse scaler/switcher

1 x Black Smart Videohub Cleanswitch 12x12 matrix with dual rack mount LCD displays

1 x PTZ Camera in external weatherproof and temperature-controlled enclosure

1 x Edimax 24 port network switch

AJA fibre converters

SDI and HDMI patch panel

Jackson power rail

### Audio

1 x Crown DriveCore 2 amplifier

1 x Soundcraft Ui24 mixer

2 x JBL AW295 – 12 Inch, 2-way, all-weather speakers

“The brightness (over 5,000 nits) is exceptionally good. We often get comments about how clear the picture is even though the sun is hitting the screen directly on a very bright day.”



### Product Info (LED panels):

[www.vuepix.tv/er-series/](http://www.vuepix.tv/er-series/)

### Application Info (Auckland Live Digital Stage):

[www.ulagroup.com/2019/07/02/new-digital-stage-for-auckland-live/](http://www.ulagroup.com/2019/07/02/new-digital-stage-for-auckland-live/)

### Distributor Australia and New Zealand:

[www.ulagroup.com](http://www.ulagroup.com)

# DPA D:FACTO 4018 VOCAL MICROPHONE

by Ivan Ordenes

Through my work at Channel 7 and with Jessica Mauboy, I get the opportunity to test a lot of microphones rigorously. I have a couple of well-known models and brands of mic capsules I use regularly with handheld transmitters, as does Jess.

## Performance

The DPA d:facto 4018 first came to my attention when I was invited to a viewing party in Sydney of Chile's Festival de Viña del Mar, the biggest and oldest music festival in Latin America. It lasts six days, hosts globally famous acts, has a live audience of 15,000, and is broadcast to most of the world. That year, a famous Spanish artist, Isabel Pantoja, made her triumphant return to the stage, after a lengthy hiatus. She was backed by a full symphony orchestra, choir, flamenco band, and contemporary rock band instrumentation; she had everything at her disposal. It was an incredible show. She had 15,000 people in the palm of her hand, crying, weeping, and falling to their knees.



As I watched, I noticed she had 'unusual' mic technique; it was like she forgot she had a microphone! She was singing to the masses, arms waving in different directions, with one hand holding the mic. She was waving it like a torch! All I could think was "those poor sound engineers!" particularly the monitor engineer! Somehow, the engineers managed. It made me really pay attention to the mic she was using, as it was picking up her voice really well, despite the mic 'technique'. It was a Shure transmitter, but fitted with a DPA capsule. I emailed DPA to congratulate them on the mic, as the capsule was producing incredible results, considering the circumstances. I let them know that I thought they'd built something really cool, and a month later, DPA contacted me and allowed me into their Masters Club so I could road test their products. They also let me know the capsule in question was a d:facto 4018.

Another great example of the quality and power of the d:facto 4018 was at the Fire Fight Australia benefit concert in February 2020. It was a demanding show technically, overlaid on Queen's stage at ANZ Stadium in Sydney, with quick changeovers. I was mixing FOH for

Jessica Mauboy, who was keen to put on a spotless performance. We did rigorous pre-show prep, and went in ready.

Something I completely forgot about was the 50 metre catwalk in front of the PA. I saw it, I even walked on it before the show, but when it came to mixing Jessica's performance, I just didn't recall it existed. I was at FOH mixing, pushing up her vocal as I needed it, adding delay and reverb, just doing my thing, totally forgetting she was standing in front of the PA. I didn't even realise that it could have been an issue for me until I was up in the balcony with Jess after the performance. She was doing a TV interview while there was another artist on stage, who started having significant feedback issues as they walked onto the catwalk. I had record label execs asking me how I got Jess in front of the PA without feedback, and all I could say was that I had the right tool for the right job.

## Frequency Response and Character

The d:facto 4018 is a very transparent mic. The frequency plot shows it as almost totally flat with a slight boost at 10kHz, which is what you hear. What impresses me most

## ROAD TEST

is that the mic has an almost mystical ability to suppress unwanted noise or reflections in favour of the direct sound coming from a good singer. The capsule seems to have the ability to ignore quieter or reflected sound from other sources, which I believe is a characteristic of DPA's miniature membrane technology. I think that's the key, as the 4018 is a great quality condenser microphone that performs live as well as, if not better than, a dynamic mic in terms of feedback rejection. The DPA 4099 is the same – put it on a kick drum or a grand piano and they both sound great; I think it's all in the miniature membrane. DPA's mics have a unique ability to pinpoint what you need, reduce distortion, isolate the signal you want, and get rid of the noise you don't. As I understand it, DPA's membrane technology is descended from the famous analysis mic company, Brüel & Kjær. It's no coincidence that NASA is using DPA mics on the next Mars Rover.

### Handling Noise

The lack of handling noise in the 4018 is amazing, especially when you consider that the 4018 capsule is designed to be fitted on a range of handheld transmitters. That's like making racing tyres for different sports cars – if the vehicle doesn't handle right, what's the point of expensive tyres? DPA has manufactured a capsule that does not transmit handling noise from the transmitter. I can't perceive it, and I've mixed plenty of performers wearing rings and other jewellery, including Jess. In front of the massive Fire Fight PA, I didn't hear a thing.

### Wired Vs Wireless

I've used the 4018 wired version on mic stands for both lead and backing vocals. In fact, we did the Fire Fight rehearsal with a



wired 4018 before switching to wireless for the show. I can't hear any difference between the wired and wireless models.

### Build Quality

Out on the road, all of my DPA products have proven quite rugged, even the 4099s with their delicate gooseneck and fine cables. The DPA MicroDot connectors are very rugged. All of the d:facto capsules are very well built, and you can feel the difference in weight from other manufacturers capsules. DPA's manufacturing standards are high, and their products last.

### Conclusion

In cooking, when you use the same spice on your dishes for years and you suddenly change to a different type of salt, people notice immediately. The d:facto 4018 is a solid capsule and an incredible product. I find DPA have a humane and artistic approach to all of their work, in R&D, design, and business in general. Their refined approach translates exactly to the results you get from using their microphones on stage.

**Product Info:** [www.dpamicrophones.com/handheld/vocal-microphone](http://www.dpamicrophones.com/handheld/vocal-microphone)

**Distributor Australia:**  
[www.ambertech.com.au](http://www.ambertech.com.au)

**Distributor New Zealand:**  
[directimports.co.nz](http://directimports.co.nz)

## DPA d:facto 4018 – The Specs

Directional pattern: Supercardioid

Principle of operation: Pressure gradient

Cartridge type: Pre-polarised condenser

Frequency response: 20 Hz - 20 kHz

Effective frequency range  $\pm 2$  dB, at 12 cm: 40 Hz - 16 kHz with 3 dB soft boost at 12 kHz

Sensitivity, nominal,  $\pm 2$  dB at 1 kHz: 5 mV/Pa; -46 dB re. 1 V/Pa, 2 mV/Pa; -54 dB re. 1 V/Pa with Adapter for wireless

Equivalent noise level, A-weighted Typ.: 19 dB(A) re. 20  $\mu$ Pa (max. 21 dB(A))

Distortion, THD < 1%: 136 dB SPL RMS, 139 dB SPL peak

Dynamic range Typ.: 120 dB

Max. SPL, THD 10%: 160 dB SPL peak

Colour: Matte black

Weight: 309 gm

Ivan Ordenes has been a Music Audio Director at Channel 7's Sunrise and The Morning Show for over a decade. He also works regularly at FOH for Jessica Mauboy and owns and operates Sydney's Dubology Studios. For 25 years his career has been devoted to the business of audio, primarily in music production. Career highlights have included mixing monitors and broadcast at the Festival de Viña del Mar, Chile, broadcast mixing for Coldplay in Australia, and recording Simply Red's DVD Farewell - Live at the Opera House.

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# PHIL SPECTOR AND THE 'WALL-TO-WALL' OF SOUND\*\*\*

by Duncan Fry

**In 1958, a few school friends crowded into Gold Star Recording Studios in Hollywood, coughed up the \$40 for a two hour demo session, and recorded a song that one of them had written.**

Their band called themselves The Teddy Bears, after Elvis' current hit, and the song was called 'To know him is to love him', which ended up a # 1 hit, selling 1.4 million copies! It's the stuff teen dreams are made of, and the plot of many a teen movie.

The songwriter was, of course, an 18-year-old Phil Spector, the legendary '60s record producer who died recently from COVID-19 complications at the age of 81.

He became famous for his 'Wall of Sound' production method. People always talk about this when they describe his 'sound', but there is very little hard info on what that process was. Ask people about it and they glibly reply "Oh, lots of overdubs, echo and reverbs and stuff." Well, not really true. But, today's your lucky day, because as a lifelong Phil Spector fan, ol' Dunk has gathered together as much information as possible on his recording process.

So, since CX is a professional magazine, for professionals, let's not focus on Phil's private life, wives, or the fact he was an abusive convicted murderer. We're going to concentrate on the nitty-gritty of getting the sound onto tape.

How did he get his sound? Let's start with the studio. From the days of The Teddy Bears onwards he nearly always worked at Gold Star recording studios, on the corner of Santa Monica Boulevard and Vine Street. It was started by Dave Gold and Stan Ross in 1950, with Ross' cousin, engineer Larry Levine joining them in 1952. It soon became known as a great demo studio. Good rates, great atmosphere and a creative vibe.

The studio equipment was pretty basic, even for those early days, and even more so by today's standards. Still, as they say, 'it ain't what ya got it's the way that ya use it!'

The tape recorder was an Ampex 350, a three-track machine, and by 1963 there was a 12 channel 'big black knobs' mixing console built by Dave Gold after hours at a friend's workshop. The console had limited EQ on each input channel — there was a low-end setting for 60Hz or 100Hz, and you could reduce that by 3dB or 6dB, or boost it by 3dB, 6dB or 9dB. Then, on the top end there was the choice of 3kHz, 5kHz and 10kHz, and you could increase those in 3dB steps up to 15dB. Four-way quasi-parametric EQ it wasn't — but it worked! Internally it had Bill Putnam's United Audio amplifiers driving the Altec Model D3 monitors.

Effects consisted of the legendary Gold Star echo chambers. Dave Gold put a lot of work into designing those echo chambers — although today we would say they were really reverb chambers. They ran down the length of the main corridor in the building. Trapezoidal in shape, with 2" thick concrete walls and fed by an RCA 6203 ribbon mic, driving a 12" speaker with a 10 Watt amplifier. These reverb chambers were so popular they were one of the main reasons for the success of the



Larry and Phil in the control room

studio, and a primary contributor to the Wall of Sound.

Pictures of the monitor speakers in the live room look like a couple of big Altec horn loaded A7 cabinets, more normally seen in concert live sound reinforcement. Still, with 25 musicians playing in a relatively small room, I guess that's what they needed to be heard.

The recording was mixed live to one of the three tracks on the Ampex, and sometimes doubled to the second track for more impact; the third track was usually left for the vocals. It wasn't recording as we know it today. No multi-tracking, just the sound of the relatively small live room and careful placement of the instrument microphones, which were a varied collection of RCA, Sony and EV dynamics or ribbons. And great musicians! For the drum mics there would just be a Neumann U67 overhead and an RCA 77 on the kick drum. That was it!

On a typical Phil Spector session there would be one or two drummers, three or four bass players, three piano/Hammond/keyboard players, and four (at least) guitarists, including electric and acoustics. Every one of them was a leading musician in their own right and formed a loose-knit collective calling themselves 'The Wrecking Crew'.

One of the secrets to the sound was quite literally hours of rehearsal. Phil was obsessive about getting the exact sound and 'feel' that he was after and would have the musicians run through every part of every track, phrase by phrase, beat by beat for a few hours until he was satisfied. Often the session would be well into overtime before anything had actually been recorded to tape! Top guitarist Howard Roberts only lasted one session, and when his fingers started bleeding, went home and never came back!

Sessions started with the guitars until Phil



Ronettes and Phil

was totally happy with the way they sounded, then the pianos/keys, then basses, and last of all the drums, with extra percussion supplied by anyone who happened to be lying around. Then all mixed to glorious Mono with a generous wash of reverb!

Phil often said that his aim was to make "little symphonies for the kids"; three minutes of musical escapism. As a youngster in the 60s I had never heard of Phil Spector, but I bought a lot of his 45s because I liked the sound of them, especially Ronnie Ronette's voice. Hmm. Didn't every teenage boy? Phil certainly did, and made her Mrs Spector as fast as possible. It didn't go well.

The quintessential Wall of Sound recording would have to be 1963s 'Be My Baby' by The

Ronettes. It had all of the above, and more. But, just as a picture tells a thousand words, so does a video show us in real-time. And luckily for us, there is a YouTube video of part of the recording session that we can watch and re-live. Multiply the 15 minute clip by four or five hours and you get a feeling of how the session went. On and on. This was the first real Wall of Sound mega hit, and for the next three years Phil Spector ruled the singles charts around the world. It seemed as though everything he produced turned to gold.

And then came 'River Deep - Mountain High'. A truly outstanding performance by Tina Turner, and the pinnacle of the Wall of Sound recording style. Phil offered Ike Turner (Tina's husband) \$20,000 to sign up with Phil's label on one condition - that he never attended the recording sessions or went near the studio. Ike understood the deal straight away; from one obsessive control freak to another.

Unfortunately, the record sank without trace on the Billboard Hot 100 charts in America, never getting higher than # 88 after four weeks. His run of success had ended. He was devastated by the record's failure, and he never really recovered from it.

Incidentally, the first person to call it The Wall of Sound appears to have been the Rolling Stones' manager and publicist Andrew Loog Oldham, in an ad publicising 'River Deep - Mountain High'. It didn't help.

Ex-wife Ronnie was quoted after Phil Spector's death; "As I said many times while he was alive, he was a brilliant producer, but a lousy husband."

**\*\*\* Early morning newsreader's slip of the tongue on radio station 3AW Melbourne, on the day of Spector's death. Was she talking about music or carpet?**



Wrecking crew in the studio

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