

# Connections

PROFESSIONAL AUDIO & VISUAL TECHNOLOGY

MARCH 2002 A\$4.90 / NZ \$6.50

## MICROPHONES

NEW LAYOUT! MARKET REPORT

- ENTECH TRADE SHOW SHINES
- YAMAHA DM 2000 EXAMINED
- VARI-LITE VL 1000 – NEW CONCEPT?
- INSTALLATION PROJECTORS
- MAJOR TOM'S SECRET REVEALED

ISSN 1320-5595



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All spelling and grammar mistakes are  
deliberate.

From the editor...

### Lighting Design snobbery

Have you heard of the Australian magazine  
"Lighting - Art and Science for International  
Designers"?

It is the journal of the Illumination  
Engineering Society of Australia and New  
Zealand and is aimed at Architectural  
Lighting Designers.

Reason I mention another magazine here,  
is that they are planning a feature on theatre  
and performance lighting later on this year.  
This was brought to my attention by a  
lighting designer, who pointed out what  
their editor had to say last time they ran  
such a feature:

*"Theatre Lighting, while being spec-  
tacular, is relatively "easy" since, with a  
darkened auditorium there is very little  
visual competition for the audience's  
attention from the stage. Maybe that lack  
of challenge is why many lighting design-  
ers have come from a theatrical back-  
ground."*

Is he trying to say that it is not difficult to  
be a performance lighting designer, the  
implication is that if you are one, you do not  
amount to much?

I have been working in professional  
lighting for fifteen years - working on  
shows, designing shows and managing  
crews and venues, and I find this an  
outrageously short-sighted statement. It  
would seem to me that this person has no  
idea about the work involved in preparing  
lighting for a semi-complex show.

Could it be that one reason why theatrical  
lighting designers find it so easy to make the

transition to  
architectural  
lighting design is  
the amount of time  
architectural  
designers have to  
create their art?

Sure, a theatrical  
designer needs to learn about new fitting  
types and that he/she cannot easily shift a  
misplaced light slightly to the left or right  
after the design is finished.

I would challenge anyone to name ten  
architectural lighting designers in the world  
that have then successfully made the  
transition to professional theatrical lighting  
designer. How about five? Just one?

A successful entertainment lighting  
designer is much more than a competent  
engineer.

Theatrical lighting design teaches many  
skills that are invaluable to the architectural  
lighting designer. The manufacturers that  
build lights for theatre are all busy building  
complex items for architectural designers to  
use. Imagine the advantage you would have  
if you had all of your theatrical and  
technical knowledge to bring to the  
complex problems found in building design.

Certainly, architectural lighting design  
has its own specialised skill set. I do not  
think it is up to the editor of any magazine  
to say that one is better or easier than the  
other.



John Grimshaw  
[john@conpub.com.au](mailto:john@conpub.com.au)

Publisher writes...

### EXTREMES of cost: scrutinising the profit gouge

Wondered where the action is in LX, AU  
and VT (formerly AV) these days?

Imagine you mix an album; or light a  
show; or supply some sound for a confer-  
ence. How would you feel if your fee was  
TRIPLED by someone in between you and  
the customer?

If you work in music production, or  
theatre, then this doesn't happen. Your costs  
are passed along and at worst a reasonable  
50% markup may be applied when the  
client is billed.

So where is this great rip-off occurring?

Not in recording, commercial audio,  
broadcast or even in nightclub installations.

The big ripoff is in Corporate Theatre -  
what the American's call 'Industrial Thea-  
tre'.

Guess who makes substantial profits?  
The event producer.

If a top 100 company needs a product  
launch, promotional event, or large meeting,  
chances are an event producer will be there  
asking what the budget is.

A corporate will scrutinize the food and  
beverage spend, but is in the dark about the  
other \$500,000 in 'fixed' costs. They can't  
quantify the mark-up on LX, AU or VT.

It's time we had a look at how the events  
business gouges its clients and its suppliers.  
Let's examine costs, variations, add on's, and  
bamboozling the client.

Tell me your story, or anecdote. I'll  
suppress your name if you wish.

Julius Grafton  
[julius@conpub.com.au](mailto:julius@conpub.com.au)



## Fear and Loathing in Fitzroy Crossing

Page 28

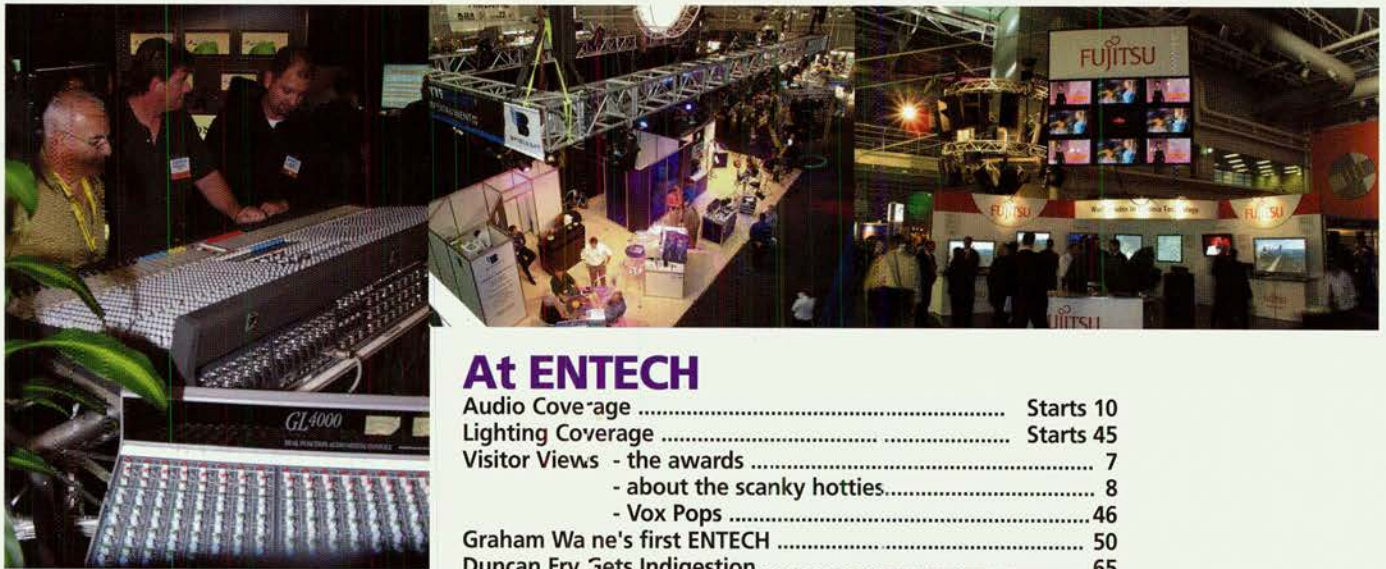
# MARKETREPORTS



Microphones  
Page 36



Installation Projectors  
Page 54



## At ENTECH

Audio Coverage .....	Starts 10
Lighting Coverage .....	Starts 45
Visitor Views - the awards .....	7
- about the scanky hotties.....	8
- Vox Pops .....	46
Graham Wa ne's first ENTECH .....	50
Duncan Fry Gets Indigestion .....	65

## News

ENTEC-1 - a HUGE success.....	7
Secret prototype console revealed .....	9

## Reviews

Yamaha DM2000 Digital Live Console.....	20
Soundcraft MH4 Console.....	22
Varilite VL1000 Launched .....	26
Command Systems Joey Remote Control .....	28

## New Products

Lab Gruppen comes down under.....	24
Presonus Digitube .....	24
Kupo Par Cans .....	24
Altronics release Penton PDM-808.....	26
Gefer - Cat 5 Extender .....	26

## Forum

Tracking Guide.....	56
Classifieds .....	58
People and Places.....	59
Letters and Email.....	61
Deep Fry - Who gives a flying friand? .....	65

## On the Cover...

This Audio Technica microphone is just one of more than 200 mics detailed in this month's report.

- Photograph by Dario Gardiman  
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**UPCOMING REPORTS:**  
Apr - Commercial Audio,  
DMX Devices  
May - PLASMA,  
Amplifiers

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# Connections

The Asia/Pacific Professional Audio and Visual Technology Monthly

MARCH 2002



eventpix.com.au

## FULL ENTECH AS RAIN LASHES CITY

*Tradeshaw full, seminars sell out, as hopeful queue turns hopeless in monsoon*

ENTECH is an outstanding trade show judging by the exhibits and the traffic of trade visitors. They came in overwhelming numbers on the first day, swamping the eight registration counters at Sydney's Darling Harbour and creating the mother of all queues for those without passes. The café ran out of food. Tropical rain deluged the city and the venue sprang leaks. Inside, business was done, equipment examined, and deals made.

The seminar program was also bursting at the seams, the three Promenade rooms were overflowing. The business at hand was professionally dealt with and many debates were held on the long walk back to the trade show floor. Seminars ran along themes, with multiple Lighting, Audio and Vision topics each lasting about an hour and a half. Seminar demand has led to a completely fresh approach for the 2004 show.

By the afternoon of day one some semblance of order had returned and visitors circulated the exhibits, which were seemingly

brighter and more clever than ever. Ideas were exchanged, concepts tested, and serious networking was underway all hours.

Visitors came from all corners of the globe, but were predominantly of Australian origin. There were slightly more people from New Zealand and South-East Asia, but less from further afield. More interstate visitors registered as a percentage than ever before, with total visitor numbers audited at 5,143.

Noise was kept to a minimum, the floor was divided into regions for Lighting, Mixed Exhibits, and Audio. Navigation around the 130 stands seemed easier than before.

The mood on the floor was business first and pleasure second, but exhibitors like TAG, Coemar and Group Technologies turned on the hospitality, with cappuccino and pseudo cafe settings. Chameleon served free beer.

Lighting exhibits were better designed than ever, big, bright and bold - while Plasma screens were the thrust for Visual Technology. It was equipment heaven - \$20 million worth.

## Awards misfire, as FOH goes smoking

*By Richard Mercure, ENTECH visitor*

I think the food was OK. And some of the talented designers who bothered to turn up seemed happy to be recognized. Everything else was deadly dreary at the 2002 ENTECH Awards dinner, held at Sydney's Metro.

They ran out of red wine. At least half the audience spent the night in the lobby smoking and squabbling. The tables were squished into what is usually a tatty rock venue. The seating plan went awry. You couldn't actually see what you were eating. The old Martin house PA was unintelligible at times. The vintage Strand lights, much heralded, proved to be feeble and also dimmer than we remember them way back when.

And, why oh why, did we need to endure that unplugged Angel Doc Neeson, who just HAD to sing that old beer song - something about: 'do I ever need to see your face again?' Please, no. NO!

Then there was the awards ceremony itself, where the strange and bizarre met the absurd. Sure, the people awards were mainly meritorious and there was little argument about who did, and didn't win. But the products! 'Technical excellence' was the criteria, so why was it was a popularity contest? Take as an example the live digital mixer. With nominations like the underrated Innovason Sensory Live, and the superb Yamaha PM 1D, how can the bread and butter Spirit Digital walk away with the expensive looking Perspex slab?

With the end mercifully in sight, the tedious compare appeared to deviate from the script and plunge

*(continued over page)*

## AWARDS MISFIRE

(from previous page)

into some kind of personal rant about the state of the DJ market, delivering his own accolades to people who were absent, presumably smoking in the foyer. Where was the hook from stage right?

Finally, it was a tragic shame that a full house could disappear into the teeming rain instead of at least staying for half a set as the all star band thrashed away in the next room. Maybe with the cigarette smoke reaching bushfire haze density it was a health induced retreat.

All in all, a strangely flat and dull night, punctuated by a lack of emotion. And red wine.

- *Organiser responds: As the main sponsor to the tune of far too much money, I totally agree. That was the last time you'll see an awards like that, if at all. It was a thankless task. But we shouldn't diminish the worth of the awards themselves. The desert was good. Time for a great big rethink.*

**Julius Grafton**

## No scanty hotties

*Libby McAllister, ENTECH visitor, is unhappy with GetLit.....*

Brilliant marketing. The males behind GetLit certainly caught my attention as I strolled the aisles at ENTECH. And I sure won't buy one of their moving lights now.

Why in 2002 do men need to gawk at scantily clad hotties, and why do scantily clad hotties willingly pervert themselves by wiggling, shaking their boobs and flirting with fat, ugly old men?

The two girls had a red feather, and they were saying something to men about tickling some 'g' spot, which presumably alludes to some kind of gmx thing? I couldn't quite get the whole message, because when I approached them they stopped their pitch. Sexist cows.

Don't the GetLit boys realise there are women lighting professionals out there too?

• *Without me entering this fat, ugly, old debate head on, one clarification: the marketing manager at GetLit is female. -Ed*

## Best technicians lauded at 2002 awards

...while Connections pulls sponsorship

Controversy surrounding the ENTECH awards is nothing new. But disagreement about the merits of some awards has spilled over, with angry words directed at the organisers and abrupt Connections advertising cancellations from some product vendors.

This has led to prime sponsor of the awards, Connections Magazine, withdrawing from future awards involving products and equipment. Connections underwrote this year's awards to the tune of \$25,000.

"The products and equipment category was the most bitter experience for me personally," said says Connections' Julius Grafton. "While ENTECH itself is fantastic, the complaints about product awards threatens to overshadow worthy awards for genuinely talented technicians, designers and companies. Some people fail to understand that I personally don't choose the nominees or the winners. They just lash out at Connections."

"The awards dinner format is also dead in the water, it doesn't work mixing food, drink and serious presentation. For the future, I can only see people and production company awards being formally presented in a tight and fast theatre style, with socialising and fighting following on after. There is no way Connections will get involved in anything that upsets its advertisers without actually meaning to. We are good enough at doing



Trudy Dalgleish wins best LD (Event/Live)

that normally."

People and Company awards are generally well accepted and this year was no exception.

The winners were:

- Lighting Designer (Event/Live) Trudy Dalgleish
- Lighting Designer (Architectural) Gordon Richmond
- Sound Designer (Event/Live) Tony Moffat
- Sound Designer (Instal/Architectural) Jeff MacKenzie
- Lighting Technician Mark Hammer
- Sound Engineer (Event/Live Production) Tony Moffat
- Production Co; (Lighting) Chameleon Touring Systems
- Production Co; (Sound) Norwest
- Prod. Co; (Audio Visual) Technical Direction Company
- Distributor/Importer: Cands Electronics
- Australasian Manufacturer: Fairlight
- Pro-Equipment Outlet: Lots Of Watts
- Audiovisual Integrator: Rutledge Engineering
- North Sydney College of TAFE Award for Industry Support of Graduated Trainees: TCN Channel Nine
- Best Lighting Product at ENTECH 2002: AVR Arc Screen
- Best Audio Product at ENTECH 2002: Yamaha DM2000
- Best AV Product at ENTECH: High End Systems Catalyst
- Best Stand at ENTECH: Universal Lighting and Audio

For Product awards, see [www.conpub.com.au](http://www.conpub.com.au)

## Fairlight still made in Aust

Despite a recent Japanese takeover, Fairlight ESF is a legitimate recipient of the ENTECH Award for Australasian Manufacturer.

For now, the firm builds equipment in Sydney, but is reorganising since a boardroom split that saw CEO David Hannay depart. Mr Hannay told Connections that Fairlight blood still ran in his veins, having rescued the company from liquidation back in 1988.

Fairlight is now controlled by Kenji Fukuda, who operates Fairlight's Japan distribution. He also controls Lightworks and recently purchased the intellectual property rights to DSP Media products like Postation. DSP Media are a defunct Sydney manufacturer.



Promotion for GetLit draws fire. See letter, left



## Snapped! Major Tom's secret console exposed

*Live Digital Audio consoles are 'the Cool New Thing. We stumbled over a prototype!*

Lars Broggard is the production manager and sound guy for Rod Stewart, and owns his own production company called Major Tom in Europe. He is also very persuasive, and tall.

Connections was investigating the new Australian Concert Productions X-Line array system in Sydney last month, when our gaze locked onto a strange digital audio console at the FOH position.

"No pictures!" yelled Lars, a bit too late as the picture above confirms. Lars was not forthcoming about the prototype console, except to say it wasn't ready. And he wasn't at all happy about the photo. We departed.

The secret console looks just like a Soundtracs DS-3, which is a post-production

console not designed for live use. The DS-3 is a 64 channel 32 bus automated console that samples at 48kHz. A 96kHz option is available. The beast above appears to offer 6 layers of 24 channels. Um, that makes 144....

When or if this live derivative makes it into production it would conceptually sit between the Innovision and the Yamaha PM1C. Euphonix System 5 is still more upmarket, and is pitched at post and broadcast, but has found a home in live sound at the Sydney Opera House.

Meantime our money is on Yamaha developing a CM3000 to extend the sensational new CM2000 firmly into upper live sound markets. (See DM 2000 story, page 2C)

## TECH MANAGERS MEET

Northern Australian performing arts technical managers are isolated. It takes 24 hours to drive from Brisbane to Cairns, and along the way are plenty of facilities. Around 35 managers convened last month at the Brisbane Powerhouse to discuss issues.

Training, OHS and equipment were primary issues for the group, who have been associated as NARPACA for almost 20 years.

The conference heard that a national basic qualification for sound or lighting technicians is likely to emerge later this year, with a Certificate 3 attained from course study and at least one year's job experience.

The technical managers also discussed equipment and lamp purchasing decisions, with many vendors making presentations.

[www.narpaca.asm.au](http://www.narpaca.asm.au)

## DAVID BELL JOINS JANDS

David Bell has been appointed to the newly created position of Sales & Marketing Director for Jands Electronics. David is an Australian who has spent the last 16 years in America and England working in both the sales and marketing areas of several leading audio companies.

The appointment adds to the existing Jands sales and marketing management team.

Sales Manager Jeff Bolt will concentrate on managing the expanding sales force, while Peter Garsard will be in a position to provide a far greater level of engineering support.

David Bell will have a particular focus on the marketing activities of the company.

## We're fired! SAE Tom cancels

It's always good to catch up with Dr. Tom Misner, squillionaire head of SAE, the global audio training conglomerate that started in Sydney and now spans the planet.

While staffing the Connections Training stand we shared with North Sydney TAFE at ENTECH, Dr. Tom's right hand man Steve (301) Defina rushed up with the startling news that Dr Tom was not at all a happy camper.

The man himself confirmed this upon arrival soon after. "Why are you in competition with me?" he enquired in his subtle way.

Some to and fro ensued, with The Doc proclaiming Connections Technical Training courses, and our relationship with North Sydney TAFE as direct competition to his empire.

Flattered we are, and not really surprised the regular full page adverts that SAE have run in Connections for nine years have been abruptly cancelled.

But we still admire you, Tom.

-Julius Grafton



## PICK YOUR FACE

Warren Luke (above) won this sexy Blueberry Ash roadcase at ENTECH by naming 126 production people in the Pick Your Face competition in the museum. The faces were from the '70's and '80's, and will soon be on our website. Warren was assisted by Marty Welsh and Garry Hall. Runners up were Brendan Callinan and Phil Dunesky, who deserve recognition for both having a good memory.

## Who is doing what?

**NO BLACK BOXES!**

Tannoy UK have released new speakers for their contracting/installation range, for when an architect says: 'We want great sound, plenty of power, but NO BLACK BOXES!'

An example, the CMS 8 TDC (above) uses Tannoy's proprietary Dual Concentric 8" transducer, and operates as a full bandwidth single point source and fortified low frequency response.

The minimalist crossover network used in conjunction with the Tannoy multi tap transformer produces a high sensitivity system with wide dynamic range and extended frequency response with even, controlled dispersion.

The frequency response is : +/-3dB 45Hz - 20kHz, with Power Handling (RMS/Program): 100W @ 4W. Sensitivity is : 92dB/2.83V @ 1m (anechoic), and Peak SPL: 102dB. The CMS8TDC is supplied with TEQ880 back can, options for square or round grill, and tile bridge.

RRP \$1151

Contact Syntec International on 02-9417-4700 for product or dealer information.

## New arena X-Array system for ACP

Brisbane firm adds substantial new line array in time for Rod Stewart tour

ACP (Australian Concert Productions) have added arena quantities of EV X-line line array cabinets to their initial inventory. (See October Connections).

Mick Previtera's ACP now have capability to handle one X-Line arena tour, plus a regional tour, at the one time. They also own an extensive Turbosound Flasshlight system, which has been retained.

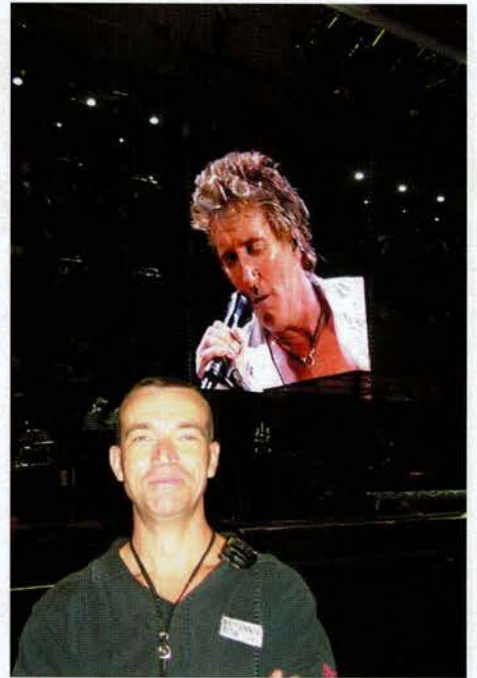
Connections caught the system in Sydney, and UK engineer Jock Bain showed us the system. Jock came out to assist ACP assemble the system, which is Crown powered.

The system comprises flown full range, downfill and floor or flown subwoofers.

Development of X-Line has included a short beta test on a Diana Ross tour last year, leading to design revisions. Rod Stewart's engineer and production manager Lars Broggard was a confirmed V-Dosc user, but switched alliance last year.

The XVLS main components are double EVX 155 bass drivers and newly developed twin neodymium 8-inch mid bass drivers loaded in a close spaced vertical configuration. Three ND-5A high-frequency drivers are coupled to a 90° horizontal by 2° vertical wave guide via a unique wave front alignment device to provide seamless addition of adjacent XVLS systems in the vertical plane.

The newly developed ND-5A driver has taken proven diaphragm and magnet structure technology to a new level with time domain



Jock Bain



An X-Line system

refinements to further improve the level-independent characteristics found in all ND-5 level compression drivers.

The X-sub is a double 18-inch system whose physical footprint is identical to both the XVLS and the X-fil system. The X-sub is loaded with EV's EVX 180b concert sub drivers.

ACP have chosen Crown 5000VZ and 3600 amplifiers to drive the system, featuring new amp racks with a new feed system and 3 phase distribution.

New trucking dollies designed by ACP and built in Brisbane hold multiple X-Line boxes, leading to very quick setup times, according to Jock. They also fit Australian trucking configurations.

The system is driven by Klark Teknik DNN 9849 processors, and BSS VariCurve equalisers.



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#### GIOTTO WASH 400

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- Strobe/shutter
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## Technology Update

## Low Smoke Effects



A sea of ground hugging fog is one of the most desirable smoke effects, yet it is often too difficult to achieve. The Jem Glaciator aims to solve this problem with a single phase (13amps required) power supply and the use of Jem Standard Heavy Fog Fluid.

This device does not require CO2 cylinders or separate fog machines to complete the package. The Glaciator is a fully integrated, self-contained, "plug-in and go" low fog generating system.

The Glaciator is compatible with external DMX control. An optional Power Ducting Adapter (PDA) is available that allows lengths of ducting to be fitted to the front of the machine for delivering ground hugging heavy fog to awkward locations. The adapter has a built-in booster fan which helps project the effect along longer lengths of ducting.

The rugged, compact design and the low power consumption is likely to make the Glaciator well placed for the touring market. The unit is priced at \$16,999.

- Show Technology  
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## Martin Audio Introduce Line Array System



Martin Audio have extended their Wavefront 8 family to include the W8L, a long throw line arrayable cabinet. The W8L is a 3-way all horn-loaded device with a 15" diameter 4" Voice Coil bass driver reflex loaded to provide extended LF output. According to Martin this 'hybrid technique' marries the very high efficiency (106dB @ 1m/w) of horn loading with the extended low frequency response of a reflex enclosure. Mid range is covered by two 8" drivers horn-loaded with toroidal phase plugs working together to maintain a 90deg horizontal coverage pattern right up to the 2.5kHz crossover point. Three 1" drivers mounted on in-line slots handle high frequencies.

The design intention is that together these drivers form a continuous vertical HF element. Thus satisfying both the line array criteria and the dispersion characteristics and high efficiency of a 90deg x 7.5deg horizontal CD horn.

The W8L cabinets are an asymmetrical design with (from left to right) LF HF MF. This optimises the output of both the mid and HF horns in terms of consistent pattern control, smooth response and wide frequency range. Viewed from the side the cabinet is trapezoidal with 3.75deg wall angles to allow arrays of varying curvature. This enables flown array cabinet-to-cabinet hinging at the front, rather

than the rear, thereby eliminating gaps between the acoustic elements, which would otherwise interfere with the line array effect.

The proprietary rigging system provides for flown arrays of up to 12 cabinets. Inter-cabinet spigot angles are selected by sliding links at the rear of the enclosure. This makes it possible to create a very tight curvature and can remove the need for dedicated down-fills.

Flown in a typical 'J' curve line array, the system needs to provide for long, medium and short throws, and therefore requires distance-based signal processing to ensure the sound has the same frequency response and level at all points in the venue. Martin Audio's DISPLAY (Direct Sound Prediction Loudspeaker Arrays) software has been developed to calculate the array design and determine the signal processor settings for each individual venue. DISPLAY is an interactive Windows program which designs, analyses and optimises directivity and audience coverage for W8L arrays. In addition it can provide 2D displays with SPL distribution prediction, vertical and horizontal polar patterns and beam width of the array at a given frequency.

Martin Audio is distributed in Australia by Technical Audio Group. +61 2 9810 5300  
www.tag.au.com (NZ +64 9 416 0190)



## BURST-2X

The Geni Burst-2X effects light is a 360-degree full-barrel effect with die-cast aluminum case. Essentially, it radiates spinning images in 14 colours or gobos and can be controlled by four DMX channels or an audio source. Trade price is \$1499 inc GST

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**SONY**

## Technology Update

## d&b audiotechnik with NAS in Australia

d&b audiotechnik's newest and first time ever Australian partner, National Audio Systems (NAS) recently exhibited at Entech 2002, the foremost Australian exhibition for Pro Audio and Lighting.

"The response on the stand was fantastic" said NAS director Peter Holland, "Better than we anticipated. We expected a certain amount of, oh yes, another black speaker box, but lots of the people who came to see us already knew d&b equipment by reputation and generally the comments were along the lines of - It's about bloody time the stuff's finally available in Australia".

NAS presented elements across a broad range of d&b products; C7s, C6s, E3, E9s, MAX wedges and their control electronics the P1200A and E-PAC.

"Not the full range, but it was surprising how well informed everyone was about these products. A number of companies approached us about systems and we'll be going to see them shortly to give demonstrations. In fact the next two to three months are already filled out with company visits and product demonstrations."

Founded by Peter Holland in 1998, NAS possesses a wealth of experience despite its relative youth. Peter has been in the industry over ten years, "My roots are in rock and roll, in fact I still mix for several local bands here in Melbourne just to keep in touch, but all of us at NAS still play in live bands to some degree". Peter also supports local theatres, indulging his passion for sound to the benefit of the local amateur dramatics circuit. Greg Anderson heads up sales from the company base in Melbourne, whilst the third member Michael Prestipino operates from Sydney.

d&b's Sales Director, Peter Tongue, commented, "We have been looking for a partner in Australia and NAS fits the bill well with their experience and enthusiasm. We are looking forward to a fruitful relationship with them in bringing - "Democracy to Australian listeners."

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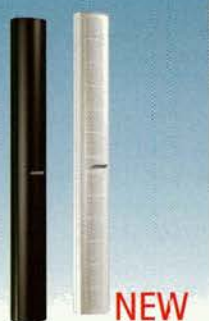
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David Claringbold, Sound Co-ordinator for Sydney Opera House's Opera Theatre, with Euphonix's Director of International Sales, Russell Waite

## Euphonix in the House

By Mandy Jones

The Technical Audio Group's stand at Entech was the perfect location for the Sydney Opera House's announcement of their new console for the Opera Theatre. Amidst the aromas of espresso and Belgian waffles, Alistair Dewar, TAG's Euphonix Product Manager announced Euphonix System 5 had been chosen after three years of intensive research by Sydney Opera House technicians and management.

In a statement issued by TAG, Alistair explained the purchase: "The Sydney Opera House spent more than a year looking at digital console technologies before concluding that the System 5 is the ideal system for them. Not only was the sound and the redundancy features of the console paramount to their decision, but the console offers them an intuitive operating surface, total recall of all console parameters including patching, essential in one of the busiest theatres in the world.

Described by Euphonix's Director of International Sales, Russell Waite, as a "very significant sale", the announcement marks the purchase of the largest System 5 digital audio console in Australia. System 5 comprises a control surface, digital mixer core, digital and analogue interfaces, and system management software.

David Claringbold, Sound Co-ordinator for Sydney Opera House's Opera Theatre, explained three years of research and trialing which were invested in making the final decision. The Opera Theatre's current console, an Amek SR9000 was beginning to show signs of wear and tear after 12 years and thousands and thousands of performances. At the same time, the need for some kind of recall or automation was recognised as a high priority in a new mixer.

"We realised automation was the way to go. At present to re-set a large analogue console for opera can involve 500 to 1000 switches, and when you're re-setting it twice a day, six days a week there can be faults. Automation of features such as the way in which sound effects are replayed, is also effective in making sure it is correct. We've got a very exacting audience, and we're dealing with not only an audience but performers with fantastically trained ears so we really need to get it right!

"We knew we had a couple of years to look at consoles so we spent three years looking around. We looked seriously at digital consoles because we were looking to the future with the decision - we didn't want to get into a situation where we bought a very good analogue console but functionally it couldn't do what we wanted to do in four to five years time," said David.

"There were a number of very strong contenders, but overall the design of the System 5 seemed to be something that could grow and adapt with us, and the support given by the Technical Audio Group was paramount to our decision."

David explained Opera House management played a much more active role in the research and final decision than previously.

"It's a decision that's been born out of an incredibly increased interest by management in how the technical interfaces with the artistic in the House. It's really important that has happened because we can't have a technical system that's not going to deliver artistic visions or else it won't deliver business visions as well. Previously a decision like this wouldn't have attracted as much interest as this has from our management, so it's given incredible faith in the guys working on the floor to know that the Chief Executive of the Opera House and the Chief Executive of the Australian Opera are really interested in what they're doing and how they're doing it."

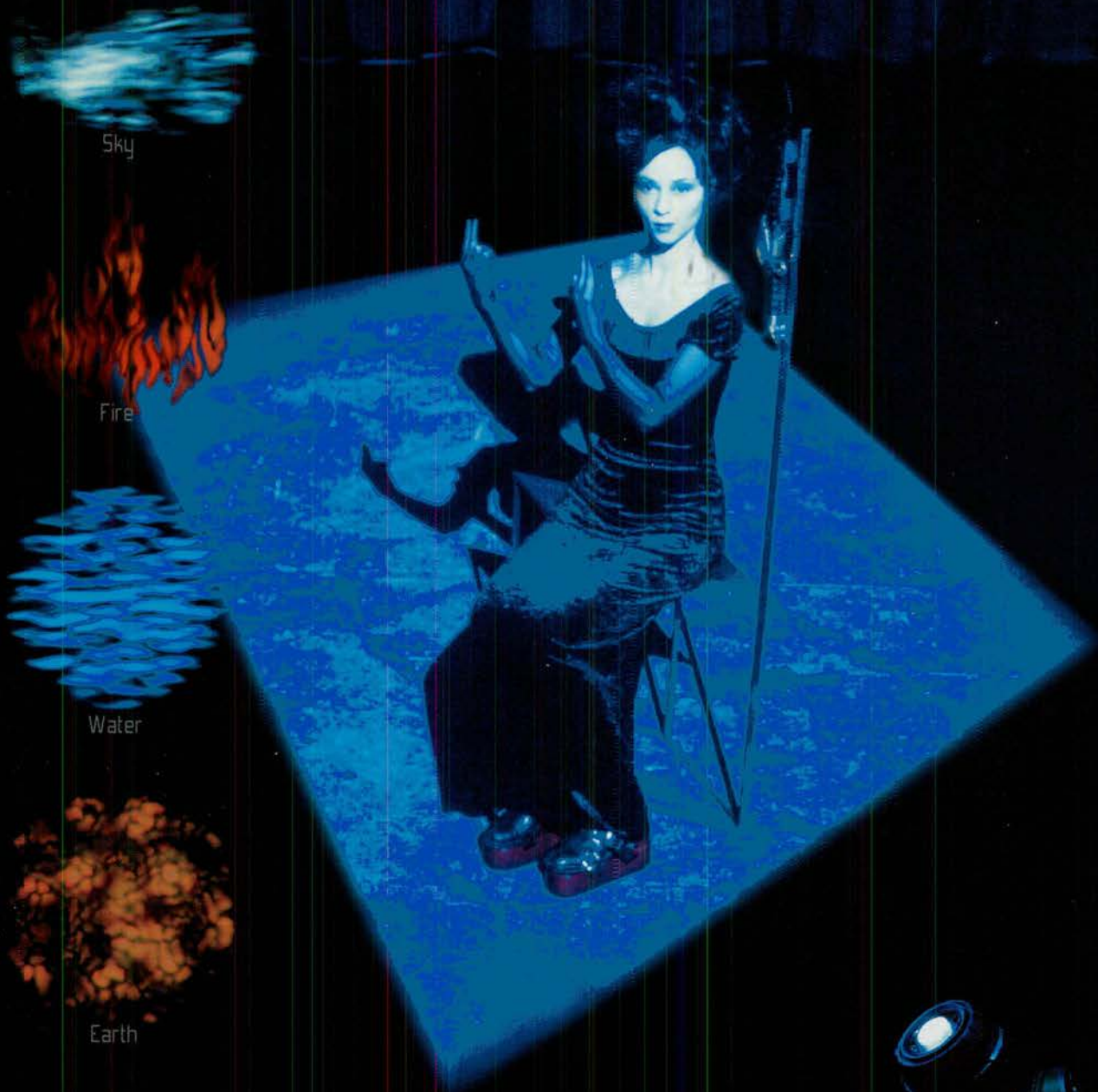
For Russell Waite the sale is significant in that it marks a move into a new market area for Euphonix, usually more common in pure broadcast and recording applications rather than live scenarios. Describing it as a "hybrid application", Russell hinted that the broadcast features of the system will be put to good use. David went on to explain:

"The Opera House has an on-line presence which is interactive in terms of ticketing or taking a virtual tour on the web-site, but it isn't interactive in the sense of performances. The ability to capture performances or archive and process those performances is central to where we're going as an organisation in the future."

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

# MAC 2000

Electronic performance



## Barco Introduces the IQ G300 Projector



Barco have introduced the new IQ Projector Series, offering several features including an advanced picture-in-picture, true seamless switching, dual-lamps, and a modular design for future upgrades. This model is slated as the first in a new series of

intelligent projection solutions for high-end applications, such as meeting rooms, videoconferencing centres, training facilities, and auditoriums.

The projector's exclusive picture-in-picture (PiP) feature allows the presenter to display up to four resizable source windows on the screen simultaneously. Display a spread sheet, your latest video clip, a presentation, and videoconference with a customer — all on the same screen. Simply re-size the source windows as your meeting progresses. The IQ RGB analog input and D-sub input allows simultaneous connectivity of two data sources.

IQ's seamless switching capability allows smooth visual transitions, with or without special effects such as fade-in/fade-out.

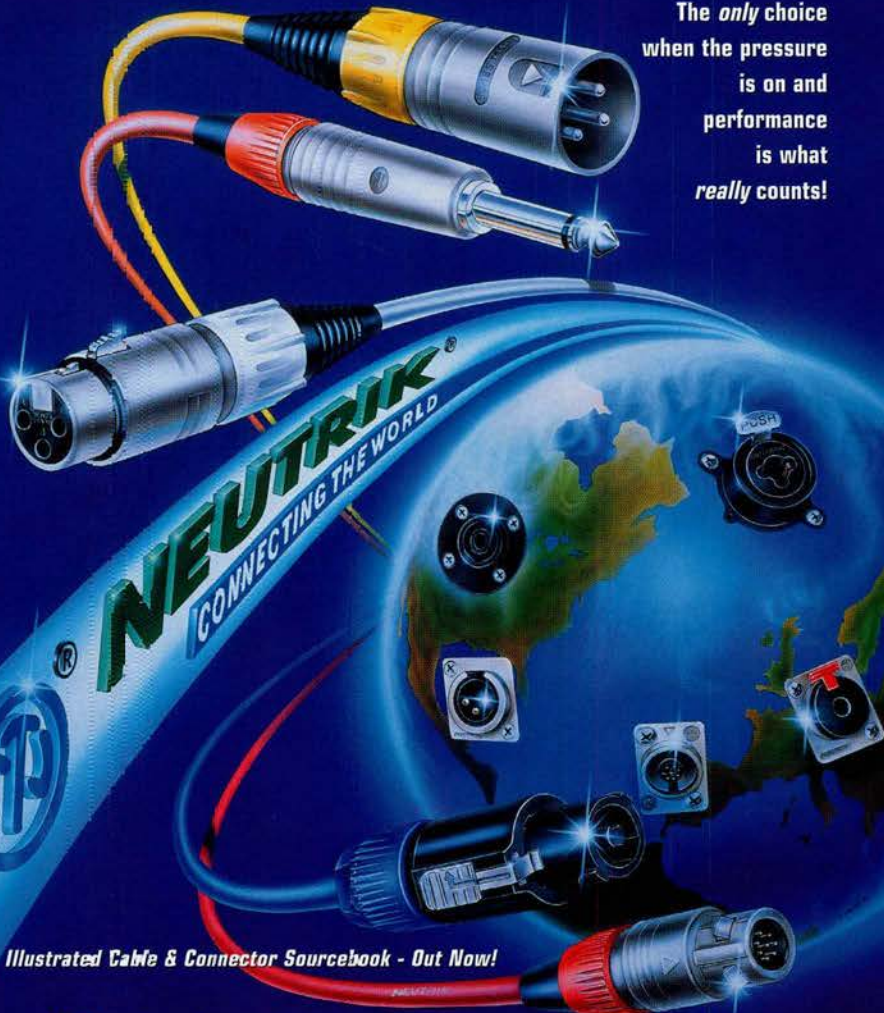
The IQ G300 uses 1.3" poly-silicon LCD panels with a native XGA resolution (1024 X 768 pixels), offering a maximum of 3,500 ANSI lumens. The platform is based on a reliable, dual UHP lamp system, with single or dual-operation mode. In single-lamp mode, smart switching doubles the operation time of the lamp. The IQ features a lamp life of 1,500 hours at dual-lamp operation. In the single-lamp mode, lamp life is doubled (3,000 hours). The projector has an extreme lens-shift capability and digital keystone correction. Pricing was not available at time of publication, but Barco tells us that the projector will be available by the time you read this.

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**This under fifty grand 96/24 digital audio console has wider uses than you may think...**

By Julius Grafton

(top) Staff at Yamaha's ENTECH stand with the DM 2000: Roger Campbell, Chris Steller, David Holmes, Megar Said and Mark Amory



Yamaha's DM 2000 production console made it to ENTECH, and suddenly became buzz of the show. It won best audio product as a popular vote, and I decided to see why.

I saw the console just afterwards at Sydney's Scundora Stage, where proprietor Michael White was uncharacteristically enthusiastic. Engineer David Café soon detailed why.

DM 2000 is a 96 channel, 96kHz, 24 bit digital mixing console that sells for under 50 grand. It has 24 channel faders, and 24 standard inputs with A-D converters. Six card slots enable users to connect a total of 96 inputs and/or outputs, and every input and output is digitally routable. In fact, it could be a digital audio router in its own right.

The 24 motorised faders access 24 in's or out's, you choose. There are four layers, so channels 1 - 24, 25 - 48, 49 - 72, and 73 - 96 appear at the 24 faders in any order you select. They can be inputs, outputs, or a mixture of both.

The little YG-DAI cards get you in and out to digital or analogue worlds, and you can remote connect to an optional AD 824 or DA 824 converter - plus remote control the head amp and phantom. This puts DM 2000 into theatre and live sound applications.

DM 2000 has 12 auxiliary busses and 8 group busses, plus stereo. There are 8 onboard effects, and genuine 5.1

monitoring. 8 balanced 'omni' analogue outputs come standard, these can be configured for whatever you like, typically 5.1 and stereo monitoring. Also standard are 3 stereo digital inputs for 2 track replay from things like DAT players, plus 3 stereo analogue outputs on XLR pairs. Inbuilt sample rate converters fix mismatched sample rates, useful in 48k TV world if something comes in at 44k or is grabbed off an effects CD.

The back of the DM 2000 has 24 XLR inputs with insert points. The console comes standard with these 24 input converters, plus it has six slots for input and output cards. You can also cascade another DM for more channels than most of us will ever need.

This is a very powerful package.

David Café and I spent an hour going over the features, and I can report operation is quite intuitive, at least if you are Yamaha logic familiar. It loosely follows O2R methodology. This is confirmed by the fact the demo console arrived at ENTECH without a manual, which didn't stop full exploration of its features.

Above the 24 faders is an enhanced scribble strip with 4 digit channel ident, plus a visual showing of matrix and assignments. There is also a graphic display of encoder status, as the rotary encoder doesn't have a circle of LED's like on the PM1d.

As you would expect, the EQ is full parametric 4 way with all the frills, and there is a gate and limiter on every channel. The 'selected channel' area could be criticized as a little short on available encoders. Example: 4 for 12 auxiliaries, with switches to change 'bank' - but I guess that is what makes this a cost effective console.

There is very extensive machine control and ProTools inter-op, data entry and very strong surround monitoring feature sets.

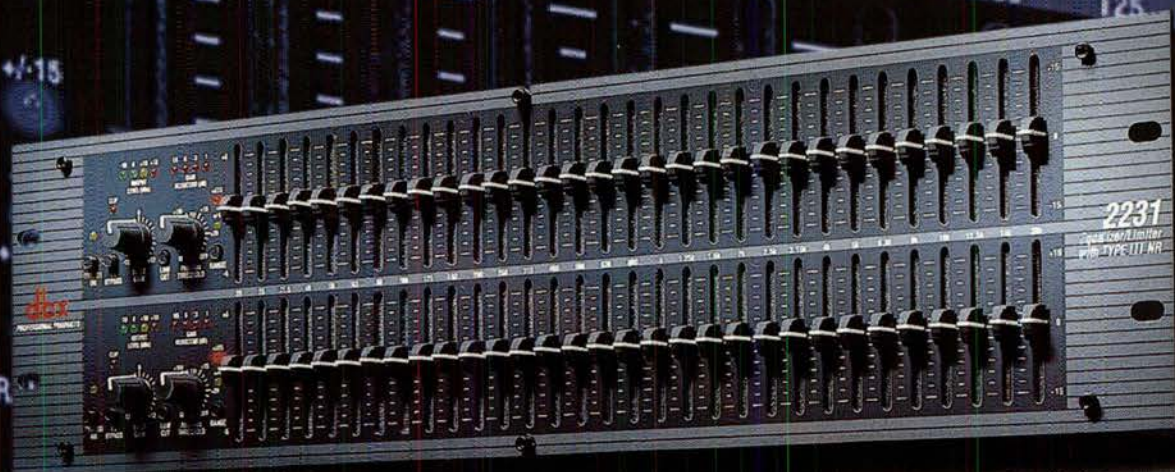
Automation will follow time code, the faders step about 250 times in 100mm, looking jerky but this is inaudible. Fades, mutes, pans, sends and EQ are all automated. You save your automation to internal memory or a smart media card.

Studio Manager software for PC or Mac comes with the DM (check it on their website), this also allows offline patching and scene management. Plus, a full size monitor is a good idea, as the smallish standard backlit display is similar to that on the O2R.

DM 2000 is a super-duper thing in my view. It clearly is first in a family, a cheaper version is mooted that would replace the now ageing O2R - possibly a DM 1000?

I can imagine a DM 3000 (if launched) could have some of the sexy hardware interface from the PM 1D. In both cases, the processing and operating system in the DM-2000 would do just fine, thank you. •

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## Technology Update



## SOUNDCRAFT MH4: TRIPLE-MODE LIVE CONSOLE

Designed as Soundcraft's entry into the multipurpose live performance console market the MH4 can be used for front-of-house, stage monitor or mixed FOH/

monitor duties. Intended to suit touring applications, such as concerts or corporate events, as well as fixed installations like theatres, churches and performance venues, the MH4 features 20 auxiliary busses, new mic amp and EQ designs, eight VCA and eight mute groups with snapshot automation, true LCR panning and outputs, and an integral 20x8 matrix. In monitor mode, each input also has a passive mic split feed to connect to a FOH console.

Another feature of the MH4 is that it is a

modular console, with frame sizes of 24, 32, 40, 48 and soon 56 inputs – all with four stereo inputs as standard. Additional stereo input modules may be added anywhere in the input section (by removing mono modules) as each input module has its own integral connector panel.

The auxiliary busses are switched into the two modes of operation by a set of 'global mode' switches on the group-aux output masters. In FOH mode, there are twelve mono auxes and eight group busses with pan controls across each pair of group busses. In monitor mode, there are eight mono sends as well as four stereo sends (commonly used for in-ear monitoring feeds). On the outputs, the stereo sends have four-band semi-parametric EQ.

The integral matrix has eight outputs, with input feeds coming from the aux busses, LCR mix output and group bus inject inputs. The four-band stereo EQ on the aux outputs can also be switched into the group inject paths. Engineers who require sophisticated matrixing on theatre and corporate events for distributed sound will welcome such a flexible architecture.

Each mono input module features four-band EQ with two parametric mid sections and swept high and low sections.

The provision of sophisticated VCA and mute grouping capabilities makes this an interesting desk. There are eight VCA groups and eight mute groups available, the settings of which may be memorized and recalled through the console's own snapshot automation system, or via external MIDI program changes through a show-controller. Each MUTE button can also act as a trigger by sending a unique MIDI note number to fire external events such as sound effects.

There are intercom capabilities using standard headphones and microphone connectors, together with an integral Clearcom compatible interface using these standard components. This can remove the need for expensive belt-packs, which may only duplicate the phones/mic already in use.

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## Technology Update

## Kupo Pro Cans



The new and improved Kupo Pro Can's from Show Technology are available in Par 64, Par 56 and Par 46. The new design provides a rear cap with lamp rotator that closes the lamp house while allowing good ventilation. A fourth colour clip is included to retain the colour frame no matter what angle the can is tilted.

There is also a safety bond providing a good earth between the can body and the cap. The units have a high temperature cable gland and silicon cable.

- **Show Technology**  
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## Europe's Lab Gruppen Amplifiers Arrive



LabGruppen is quite well respected in Europe for its lightweight amplifiers, and they have now been launched into the Australian market by Audio Telex Communications. Thomas Mittlemann, Lab Gruppen's International Sales Manager was at ENTECH 2002 for the launch.

Lab Gruppen claim that they offer a "premium product that is sonically sensational." The fp6400 for example, offers 2100 watts per channel at 4 ohms, 2 RU and just 10kg.

While there is certainly potential in the touring and hire markets where weight, size, reliability and sound quality are the four essential criteria, Lab Gruppen are also targeting the contract audio installations as well.

Audio Telex Managing Director Roy Morgan explains the reasoning behind the alliance with Lab Gruppen, "most of our customers would be aware of just how much business we do in Europe these days and during the last 12-18 months we have seen Lab Gruppen's amazing level of success across so many countries and markets. Lab Gruppen are simply THE choice in Europe and we're confident they will be here as well."

Asked how Lab Gruppen sits with their own Australian Monitor Pro Series brand (as opposed to their very successful Australian Monitor Installation Series brand), Roy explains "the Australian Monitor KA Pro Series has been and will continue to be very successful for us. Recently, most of our Pro sales success has been with the KA series, making up over 90% of Australian Monitor Pro sales. It therefore makes

sense to compliment the popular KA series at the premium end of the market with Lab.Gruppen in place of the now outdated AM Series. We have ceased production of the AM series and all other non-KA series models and will focus all of our efforts at the premium end of the market on Lab.Gruppen

- **Audio Telex**  
+61 2 9647 1411  
[www.audiotelex.com.au](http://www.audiotelex.com.au)

## Presonus Digitube



## Tube Preamp + Parametric EQ

Born from the BlueTUBE, the DigiTUBE adds a three band sweepable EQ and 24bit Digital Output. The mic preamp features 70dB of gain with 22dB of Headroom.

The DigiTUBE provides a three band EQ which is fully sweepable with overlapping bands for maximum tone shaping. A 24Bit Digital output via S/PDIF makes the DigiTUBE the perfect front end for soundcards and digital recorders. The DigiTUBE offers XLR analog output and TFS Insert point for patching in a compressor or other outboard effect unit.

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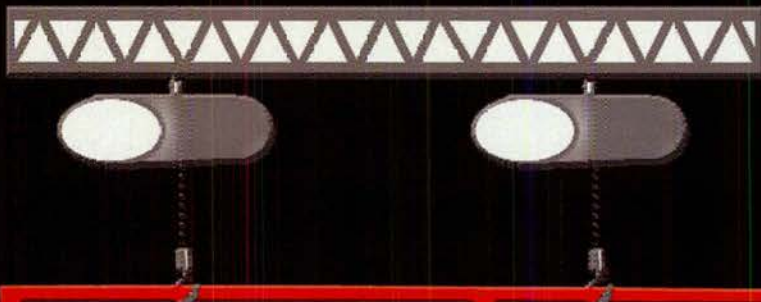
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## Technology Update

### Budget Matrix Switching & Audio Processing



Perth distributor and manufacturer Altronics, displayed at ENTECH their new 8x8 audio matrix and sound processor – Penton PDM-808.

Simply put, the 8 I/O device can mix, process and control any of its inputs to any of its outputs.

All input audio is converted to a digital signal using 24bit 48KHz sampling, then processed as required before being sent to the outputs as an analogue signal.

The inputs can be set to three different input sensitivities (0dB, -25dB & -55dB) and can select 24V or 48V phantom power, thus allowing any signal from mic level to line level to be used as the source.

On board processing includes parametric EQ, Hi and Low cut filtering, compressor/limiter and signal delays for each of the eight input signals. Another interesting feature is the "Smart Paging" system which is an intelligent noise sensing system.

The system can be configured via the front panel display, or via RS-232 to a Windows PC and the dedicated software package (see picture above). Up to 20 different configurations can be recorded and stored for recalling via remote contact switches or the front panel. The eight output levels are displayed on the front panel using LED VU meters. The Altronics code for the unit is A5300, and it is priced at A\$6,810.

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## Cat5 Extenders for Monitor and USB

Gefen's two new ex-extend-it CAT5 extenders employ a core USB technology that enables a single CAT5 cable to carry signals for both USB and the monitor. The ex-extend-it CAT5-1000 is a simple solution for those who want to operate a computer from a remote location. The computer's audio, video (for monitor) and USB signals (for keyboard and mouse) are connected to the sender unit. The receiver unit is connected to the monitor, keyboard, mouse & up to 2x USB peripherals.

The ex-extend-it CAT5-5000 is a more comprehensive solution where the sender and

receiver units both support a set-up of two monitors, as well as a remote set-up of two USB peripherals. With the CAT5-5000, users are able to work on two dual-screen workstations locally and remotely using just one computer.

Both the CAT5-1000 (US\$695) and the CAT5-5000 (US\$995) are cross-platform solutions that maintain the highest video resolution of any CRT or LCD analog monitor and extend audio for multimedia applications.

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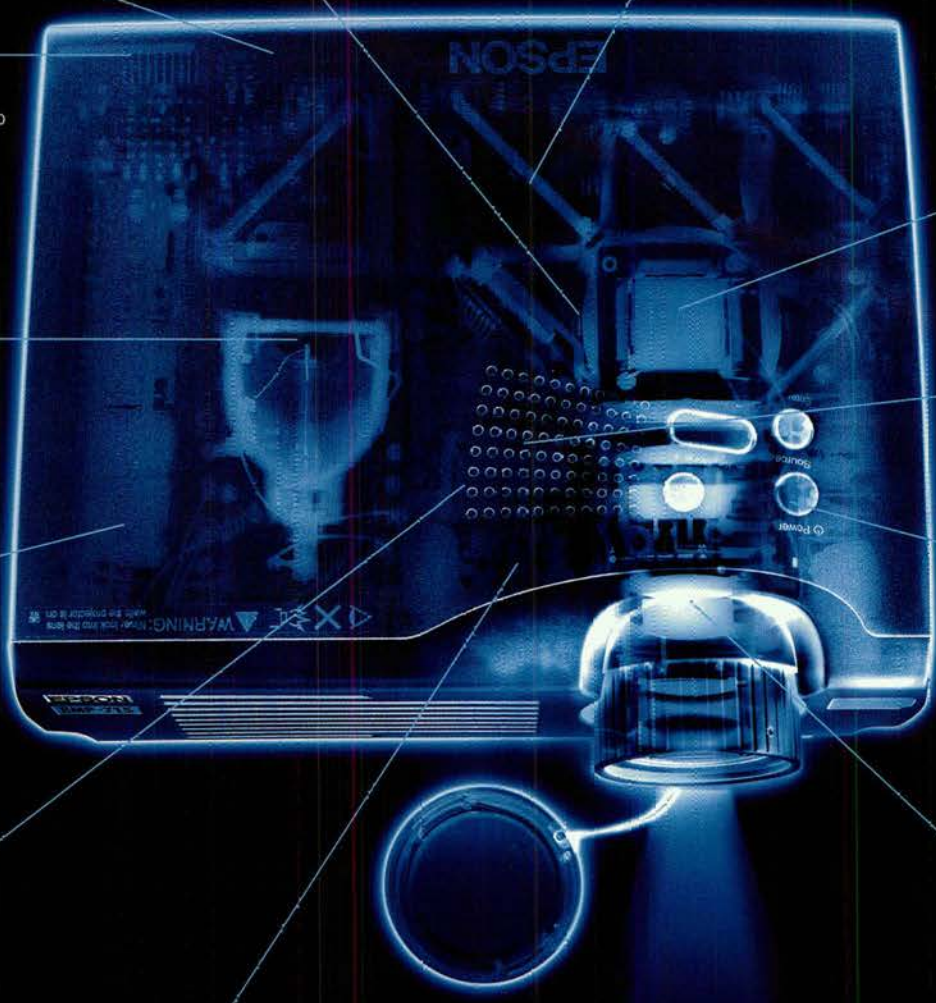
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# Fear and Loathing in Fitzroy Crossing

MD of Australian Audio Supplies Dave Croxton, talks about his travels with one of Australia's most popular radio personalities Ian McNamara from the ABC's "Australia all Over" program...



**W**hen I answered the phone one day in the office I couldn't mistake the voice on the end of the line.

"It's Ian McNamara here from the ABC", "Is that you Macca" I replied recognizing the voice that I had often woken up to coming from the radio on Sunday morning.

"Yeah mate I just wanted to get some rack ears for my Mackie"

That was how I came to meet Macca.

A few months later Macca called me and asked if I could come in and give him a hand in putting together his mobile outside broadcast setup. I happily volunteered my time and we met at the ABC building in Ultimo to discuss his requirements.

I made a few suggestions which he took on board and we talked about the many different places we had both traveled to around Australia. A couple of weeks later Macca was on the phone again. "Hey Dave do you want to come to Fitzroy Crossing on the weekend to help out with the show?" Why not I thought, the Kimberly is a beautiful place to be in July with the warm days offering a nice break from winter and it would be an interesting trip to say the least.

Two days later I was at the airport to catch a flight via Alice Springs and Darwin to Broome. I arrived in Darwin about 2.00pm and met up with Colin West from Top End Sounds whom I had organized to spend the afternoon with before I jumped on my flight to Broome at 6.00pm.

Finally I arrived in Broome at 8.30pm that evening, some 14 hours after departing Sydney and met up with Lee Kelly, the Producer of Australia All Over, and Jenny Prescott, an ABC technician. Macca had already departed in a four-wheel drive

that day with all the equipment.

We headed off for Fitzroy at 7.30am the next morning. For those of you who have never been there Fitzroy Crossing is a predominantly aboriginal settlement on the banks of the Fitzroy River about 400kms East of Broome in Western Australia.

Australia All Over had been invited out to do the show in conjunction with the town's major annual event, the Ecodeo. We arrived at Fitzroy around lunchtime and headed straight for our accommodation the Crossing Inn.

The Crossing Inn built in 1897 as a shanty inn and trade store for long distance travellers is a sight to behold. Mostly dirt floors and corrugated iron the Inn is now owned by the local aboriginal community who also make up the majority of the customers.

Each day at opening time a slow procession starts from the town down the couple of kilometers of dirt road to the Inn where pallets of beer are being loaded into fridges ready for the day's trade. By mid afternoon the grounds around the Inn are littered with cans so thick in places it's hard to see the red dirt. It's a sorry sight really but not one that I wish to make comment on.

Moves are afoot to help the aboriginals with the alcohol problems and hopefully they will make headway in coming years. On the other side of the river is the Lodge, an upmarket Hotel Motel with manicured lawns and gardens and a huge camping ground, full of the latest four wheel drives and caravans. The comparisons are stark and make you realize why so many people have their heads in the sand towards the real plight of the Aboriginal.

Our accommodation consisted of small pre fab cabins surrounded by an 8' fence. Each evening the gate into the compound was locked which sort of

(continued over)

Dave Croxton






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*"It appeared that the cistern was the favored environment for these creatures"*

heightened the concern about the large drunken crowd that inhabited the bush out the front of the pub. The rooms were small and basic with some unexpected guests. When you flushed the toilet a barrage of green frogs would be flung into the bowl. It appeared that the cistern was the favored environment for these creatures.

We headed over to the Rodeo ground to commence the setup. We positioned the equipment on a couple of trestle tables under a beautiful ghost gum. The Telstra guys had run the phone lines for the show a couple of kilometers through the bush which says a lot for outback ingenuity, especially when think how hard it is to get a phone line connected in the city.

The program on this occasion was running through two Mackie 1402 Mixers. One was with Macca and had his microphone, CD, Mini Disc and Cart machines attached which he or an operator could fade in and out as desired. The output of this mixer fed to a second 1402 which also held the inputs of the phone interface a couple of Earthworks SR71 for ambience and live performances and the ISDN return from the ABC so we could hear the News and other inserts placed in the program from Sydney.

The outputs from this 1402 fed a couple of Mackie SRM450 speakers so the crowd that gathers to watch the show can hear what's happening and of course sends the main broadcast feed to the ISDN unit which is connected to the ABC in Ultimo. There is also a return line to the phone so callers can hear what is being said.

It is a very clear and simple little setup which works very well. The quality of the broadcast and especially the on site sound is always the subject of many compliments. According to Macca the SRM450s had added a whole new dimension to the outside broadcasts as their quality and coverage had really lifted the atmosphere in the crowd which, in turn, makes for a better radio program for those listening around Australia. The extremely flat response also meant there was little problem with feedback while Macca roved the audience with his radio mic.

After setting up we spent the afternoon watching the rodeo and recording the crowd to use in the show the next morning. It's an awesome sight to see, these mostly slightly built cowboys strapping themselves to

two tonne wild bulls. Fortunately no one was killed that afternoon although I met I guy in the front bar of the Inn that night who showed me the scars of where his arm had been torn out of the shoulder socket when he fell from a bull in the rodeo a couple of years ago.

As we were in Western Australia and there was a two hour time difference between our location and the east coast we were up at 2.00am to get the show on the air by 3.00am which coincided with a 5.00am start on the east coast.

Celebrations from a big outside party at the rodeo were just winding down. People were staggering off to swags all over the place and small fires outlined the many groups that were settling down for the night as we were about to start.

On the way into the grounds I had to unceremoniously drag an unconscious individual off the track who had decided to pass out right in the middle of the gateway making it impossible to go around him.

In hindsight he was lucky that we came upon him and not a ute full of cowboys otherwise he could have woken up with more than a headache!

The show went well and we headed off back to Broome that afternoon. Since that event I have done a number of outside broadcasts with Australia All Over in many different parts of country. We traveled down to Melbourne for the Cup, Geraldton in Western Australia for the opening of the Memorial for the HMAS Sydney and Maryborough in Victoria for the World Gold Panning Championships.

I have met some great people from all walks of life and I enjoy the unique Australian feel of the show and the places we go.

One of the great things about being involved in the audio industry is meeting people that are forging their place in history through music or the media. It has been immensely satisfying and rewarding for me to assist these individuals in providing them with the best audio tools to meet their needs.

At the end of the day when you hear the results of their work you know you done your little bit to help out in the big scheme of things.



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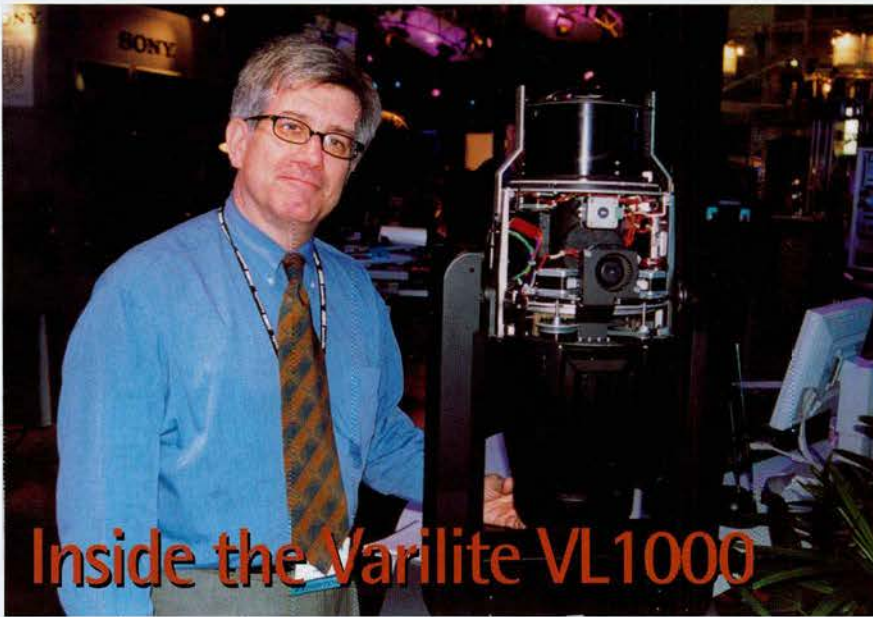
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**One of ENTECH's high-lights for many lighting professionals was the opportunity to see and play with Varilite's latest luminaire...**

by John Grimshaw

Tom Littrell, Technical Marketing Manager for Vari-Lite (shown above), had come from the head office in Dallas, Texas. Littrell explained that Vari-Lite were showcasing their entire range, but the newest product was the VL1000.

"It's our take on building not an effects-laden automated light, but a work horse ellipsoidal light for the theatre with automated features. It starts out 3200°K colour temperature incandescent source. So it's for theatre, and television - it starts with good skin tone style lighting, as opposed to arc sources.

"But it's also designed to be as subtle as possible, to create the warm and cool tints and pastels that are the theatre designer's stock and trade.

"We've been getting an amazing reaction, lots of interest from Australian theatre designers, consultants that deal with permanent installs in theatres, churches and civic centres, universities."

The Varilite VL1000 ERS luminaire found its way to ENTECH, where it was poked and prodded by numerous visitors to the show. Just what makes this moving light so special? Well, simply put the light is very like a standard ellipsoidal reflector spotlight that is sitting on a moving yoke.

The main barrier preventing moving lights from becoming widely used in theatrical situations is the amount of noise these devices have typically created. While all brands are moving towards near silent models, the VL1000 is one of the first Varilites to do so. The unit has low noise fans for cooling of internal components only during "hot" operating conditions.

The device does have numerous "moving light" features. These include a fully crossfadeable CMY color mixing system and a six-position rotating gobo wheel with five rotatable, indexable gobo positions and one open gobo position, variable diffusion, and a zoom lens that ranges from 19° to 36° for normal imaging and a super zoom function that ranges to 70°.

Interestingly, you can only have an iris if you choose a model without shutters. In terms of optics, this is quite understandable as the iris, gobos and shutters all need to fall into that narrow focus position known as the "gate" in conventional profiles. Moving lights tend to get away with having a wider "gate" area because they can be remotely focused, thus shifting the precise focal point to the gobo/iris/shutter as required. Other moving lights like the new Mac2000 Performance (which also has shutters) keep each of these three features - probably because there was more room to fit them in. In the compact design of the VL1000, there was obviously not enough room to fit them all, so one had to go.

Pan and tilt is smoothly provided by stepper motors that include encoder correction. The pan range is 540° and the tilt range is 270°. Resolution is 0.1°.

Both tungsten and arc light source variations of the VL1000 are available. The tungsten version uses a 1000W halogen lamp which gives a 3200°K colour temp just like the standard theatrical lamps and familiar to designers that work exclusively in this area. The 575W arc version provides a colour temperature of 5600°K, and includes a mechanical dimmer and a truss mounted, fanless ballast.

Another optional inclusion is an automated four-blade shutter mechanism. The four-blade system can frame and crop the beam field, with each blade able to cover up to 85% of field, as well as being able to individually rotate up to ± 35°. Also, the entire shutter mechanism can rotate through 90°.

One of the key features of this unit is one of the simplest - it weighs only 27kg. With the High End Xspot and the Coemar CF7 coming in at around 32kg, and the Mac2000 a whopping 47kg, the VL1000 is definitely the light-weight of this group. However, because of the choice of lamp used, it is also the least bright of this same group.

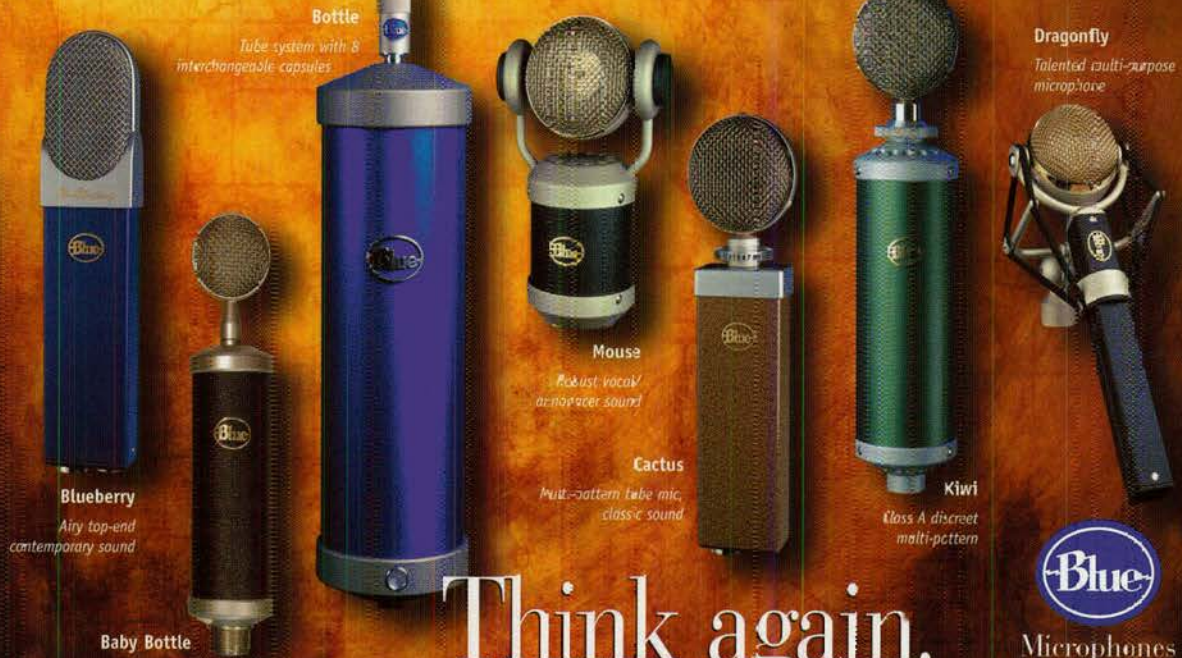
The "shutter" version of the device is quite DMX hungry, using up 27 DMX channels for each unit - limiting a single DMX stream to only 18 units. This includes three separate channels for controlling the time for a change to occur. The three channels control different groups of parameters - one for pan/tilt time, one for colour time and one for all remaining beam shaping controls. If each time control is set to 100%, then the fixture follows exactly what the console tells it to do. Values less than 100% control the time from 310sec at 99% down to zero seconds at 0%.

Software updates for the fitting are installed via the DMX input. This is initially achieved by using a PC that has an RS232 (Comm port) to RS485 (DMX) interface. Subsequent fittings can be updated "fitting to fitting" by connecting two fitting via DMX and activating the appropriate menu command. The ellipsoidal reflector is glass with a "dichroic cold mirror coating".

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Prices are RRP (inc GST), though may vary due to US\$ exchange rate:  
Varilite VL1000A (arc) - \$15,495  
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## A jump up from other remotes

After seeing the new Command Systems "Joey" remote control at ENTECH, Connections decided to take it for a test drive. Aimed at simplifying control of devices in a venue or small conference room, this stand-alone unit may even make in-roads into the consumer market.

Essentially, the Joey is a universal infra-red remote control. Shaped like a PDA with an extended base (for the 4AA Batteries), the

Joey fits comfortably in one hand. The 300g unit is 130x85mm and 40mm high, and its solid ABS construction feels sturdy enough to accept the level of abuse that such an item is likely to receive.

The touch screen is a 4x6 matrix of user-defineable 'buttons', and the power-saving technologies employed by the unit should, according to Command Systems, provide about 6 months of battery life under normal operating conditions.

The most striking thing about this unit is the complete absence of any hard buttons - even an on/off switch. All interaction is via the digital touch screen that features a 320 x 240 LCD colour backlit display. The model tested had a simple 8 colour display, however Command Systems are looking into a full colour model for release shortly (a monochrome version is also available). Interestingly, because the unit has a fully configurable display, it can be set up in either portrait or landscape mode as required.

The 4x6 screen matrix requires a firm press to turn the Joey on or activate a control, reducing the likelihood of accidental operation. When the unit is first activated there is a slight pause, but once awake the touch screen responds immediately to commands.

All images and actions are configured with the provided Windows-based software and downloaded via a serial port.

The images are standard 256-

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## NEW PRODUCTS

colour Windows Bitmap files that may be created with any graphics software, allowing the user significant freedom in the presentation of the remote. With 4Mb of Flash memory, the Joey can store up to 16 screens (48 for the mono version) each with 24 buttons that all can initiate any sequence of actions. Being flash memory, the unit will not lose the configuration if the batteries expire. Interestingly, the Windows software can also be used to provide a direct link to control a PC with the Joey.

The unit tested used a pre-release version of the software, though Command Systems tell us that the final version is due shortly. The only real problem discovered in the pre-release Windows software was encountered when the computer display resolution was less than 1024x768 pixels which required continual juggling of the various windows on-screen.

It is worth noting that this is not a learning remote, and all IR codes must be either downloaded from the growing database of commands at the Command Systems website, or created by their own IR Sampler (which is available throughout their dealer network).

All IR commands can be sequenced and the flow of commands may be paused or looped as required. The 38KHz IR output is boosted by the use of 4 long-range, high power LED emitters at the top of the unit.

Using the Joey and its companion software is very intuitive. With the default configuration as the basis for any modifications, changing screen images and IR functions were quite easy. After modification, an entire system upload took just 3min to complete (partial uploads are also possible if the modifications are minor).

From the website, the IR codes for two test devices were loaded. Both worked flawlessly. In fact, the significant power of the IR output was evident by the difficulty had in trying to get the remote out of range of the test devices.

It is obvious that Command Systems will continue to refine the design of this device. Perhaps the addition of an in-built clock and the ability to fire events at pre-determined times or intervals would be a good upgrade. It certainly would have been nice to have some visual feedback of a key press/IR transmission, as the optional key 'click' noise could be lost in noisy environments.

In all, the Joey's simple interface, flexibility and ergonomic design it likely to make the device the ideal solution for numerous applications.

RRP for the colour Joey is \$1499 inc GST

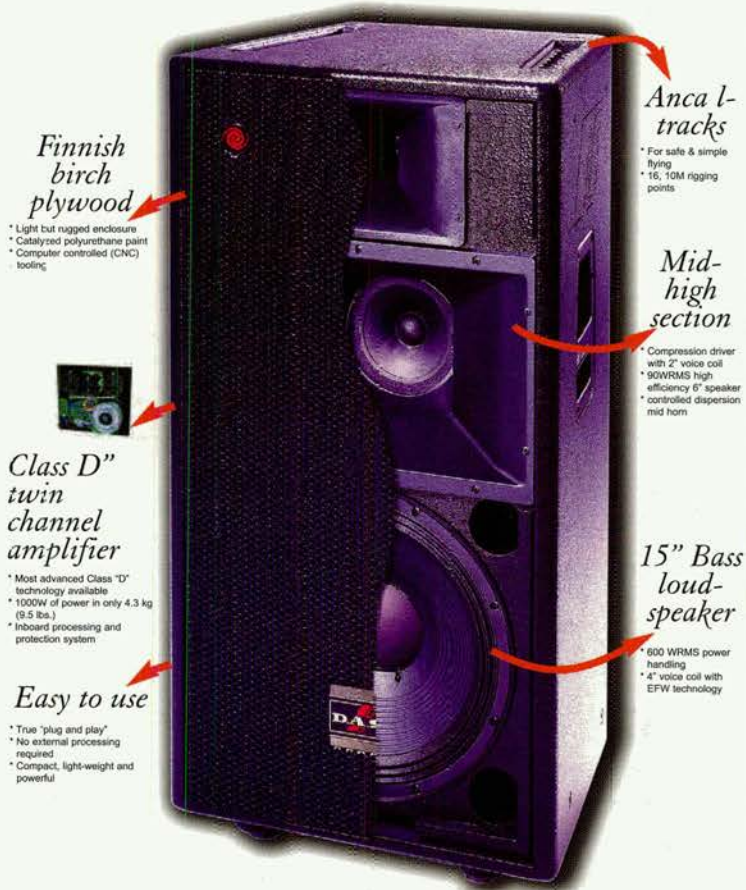
RRP for monochrome is \$1099 inc GST

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### Dr. G's TIP:

With so many different IR protocols in use, it is always prudent to test key equipment with any learning remote prior to purchase to avoid any incompatibility issues.

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# MICROPHONES

If you are looking for a cheap robust microphone to loop over a guitar amp handle or if it's time to invest in a new studio condenser (perhaps even a tube microphone) read on.

This month we have changed the Market Report format to make it easier to get a quick snapshot of different types of devices for sale in the Australian pro-audio market. Alongside the brand and model number are listed basic specifications, features and what you can expect to pay inclusive of sales tax.

This list-type format should be helpful particularly when the range of product is immense, as it is with this months report on microphones. To organise this report we set three categories: Dynamic, Condenser, Headset and Miniature microphones (Wireless microphones and systems will be covered in June). Along the way we discovered that the three categories made things a little difficult for some distributors who stock specialist equipment such as tube, capacitor or ribbon microphones, so you will find that these items are either grouped in with condensers, or in the special category at the end of the list.

In general, larger microphone manufacturers have a strong presence in the market

## Dynamic Microphones

Microphone	Best for	Pattern	Capsule Type (Normal or Compact)	Response
Mechanical	Acoustics	Features	List price inc gst	
<b>AKG D112</b>	Bass / Kick Drum	Cardioid	Low Resonance Dynamic (Normal)	20 to 17kHz
	Built in wind screen	Powerful response below 100Hz	Handles 168dB SPL with no dist.	\$539
<b>AKG D3700</b>	Vocal	Hypercardioid	Neodymium (Normal)	20 to 18kHz
	D-cast body w/Iso-damp suspension	Vocal tailored frequency response	Built-in w.screen /removeabl. pop filter	\$229
<b>AKG D440</b>	Instrument	Cardioid	Varimotion (Normal)	20 to 20kHz
	Rugged inject molded plastic body	Drums & Inst tailored freq response	Integrated stand adaptor & brack't	\$249
<b>AKG D880II</b>	Vocal	Super Cardioid	Varimotion (Normal)	20 to 20kHz
	Integrated wind and pop screen	Vocal tailored frequency response	Hot seller avail. with on/off switch	\$199
<b>Apex 380</b>	Vocals	Cardioid	Neodymium (Normal)	50 to 18kHz
	Double shockmount system	High sensitivity & linear response	Outstanding live performance	\$225
<b>Apex 750</b>	Vocals	Cardioid	Dynamic (Normal)	50 to 1500Hz
	Rugged, soldered grille	Sens.-72dB Max Input SPL: 130dB	Best value in a multi-purpose mic	\$130
<b>Apex 770</b>	Instrument	Cardioid	Dynamic (Compact)	50 to 1500Hz
	Cartridge in 1 piece molded design	Sens.-70dB Max Input SPL: 130dB	Excep'l reliability & durability	\$120
<b>Apex 950</b>	Vocals	Cardioid	Dynamic (Normal)	80 to 12000Hz
	On/off switch	Sens.-70dB Max Input SPL: 130dB	Good quality at an unbeatable price	\$85
<b>Audio Technica ATM23HE</b>	Snare	Hypercardioid	Hi-energy neodymium (Low profile)	70 to 16kHz
	Rugged, for snare rack & tom	High output, high SPL, low-noise	Integral stand clamp	\$365
<b>Audio Technica ATM25</b>	Kick/toms	Hypercardioid	Hi-energy neodymium (Low profile)	20 to 18kHz
	Rugged low profile kick & tom mic	Rugged high SPL warm bass Mic	Integral stand clamp	\$365
<b>Audio Technica ATM41HE</b>	Vocals/Instrument	Hypercardioid	Floating diaphragm (Normal)	50 to 17kHz
	Rugged, vocals instruments amps	Superb clarity & off axis rejection	Floating caps reduces hand'g noise	\$310
<b>Audio Technica ATM61HE</b>	Vocals	Hypercardioid	Floating diaphragm (Normal)	50 to 18kHz
	Rugged hand-held vocal Mic Ext. response & reduced off-axis	Floating caps reduces hand'g noise		\$295
<b>Audix D4</b>	Kick Drum	Hypercardioid	VLM Type-D (Compact)	40Hz - 18kHz
	Machined Aluminium	Max SPL 144dB	Precise low frequency reproduction	\$545
<b>Audix OM1</b>	Vocals	Hypercardioid	VLM Type-C (Normal)	50Hz - 18kHz
	Machined Brass	SPL 140dB Off axis rejection >30db	Maximum gain before feedback	\$699
<b>Audix OM2</b>	Vocals	Hypercardioid	VLM Type-B (Normal)	50Hz - 16kHz
	Metal body, dent resistant steel grill	SPL 140dB Off axis rejection >25dB	Good feedback rejection	\$259
<b>Audix OM5</b>	Vocals	Hypercardioid	VLM Type-B (Normal)	50Hz - 19kHz
	Metal body, dent resistant steel grill	SPL 144dB Off axis rejection >30db	Unsurpassed gain before feedback	\$549
<b>Azden DX-580</b>	Vocals	Uni-Directional	(Normal) 45 to 16kHz	
	Rugged Die-cast aluminium housing	-56 dB + 3dB @ 1 KHz	Lightweight solid construction	\$109
<b>Behringer XM2000S</b>	Vocals	Cardioid	Dynamic (Normal)	40 to 16kHz
	Spherical Filter,Steel Mesh Grill	Presence Peak Suits Vocals	Top Seller,With On/off Switch	\$99
<b>Behringer XM8500</b>	Vocals	Cardioid	Dynamic (Normal)	50 to 15kHz
	Spherical Filter,Steel Mesh Grill	Excellent Feedback Suppression	Reduced Handling Noise	\$89
<b>Beyerdynamic M88TG</b>	Vocals	Hypercardioid	Dynamic (Normal)	30-20,000 Hz
	Low mass diaphragm, fast response	Vocal Benchmark, Popular Kick Mic	Ultra Fast response, Good low end	\$749
<b>Beyerdynamic M99</b>	Broadcast/Studio	Hypercardioid	Dynamic (Large)	30-18,000 Hz
	Steel mesh, Cage, Shockmount	Very high SPL no loss of Quality	Presence and 3 way EQ switching	\$999
<b>Beyerdynamic OPUS67</b>	Snare, Racks	Hypercardioid	Dynamic (Compact )	40-12000 Hz
	Drum Clamp and Gooseneck	Fast transient, ideal acoustic mic	Easy set up, ext wide adjustment	\$299
<b>Beyerdynamic OPUS69</b>	Vocals	Hypercardioid	Dynamic (Normal)	35-16,000 Hz
	Sleek design, Steel mesh grill	Uncoloured freq. Response	Low Feedback, Low spill	\$399



AKG D112



AKG D440



Behringer XM2000S



Behringer XM8500



Apex 380



Beyerdynamic M99



Beyerdynamic OPUS67



Beyerdynamic M88TG

Microphone	Best for	Pattern	Capsule Type (Normal or Compact)	Response
Mechanical	Acoustics		Features	List price inc gst
<b>CAD 25</b>	All-rounder	Cardioid	Neodymium (Normal)	50Hz-16kHz
	Recessed & lockable	On/Off switch	Natural transparent sound quality	Int.pop filter/pouch/ mic clip \$155
<b>CAD D94</b>	Vocals/Inst.	Super Cardioid	Neodymium (Normal)	40Hz-30kHz
	Flx/Form hard'nd steel grille-screen		Natural transparent sound quality	Internal multi-stage pop filter \$225
<b>CAD KBM412</b>	Kick/L.toms/gtrs	Cardioid	Neodymium (Compact)	30Hz-15kHz
	D/cast z-alloy body/hard'nd screen		Extended sub low-end freq. resp	Shock isolation clip incl. \$345
<b>CAD TSM411</b>	Percussion/Instruments	Cardioid	Neodymium (Compact)	30Hz-15kHz
	D/cast z-alloy body/hard'nd screen		Great on snare, toms & ampstacks	Shock isolation clip incl. \$245
<b>Electro Voice CO 4</b>	Instruments	Cardioid	Neodymium (Normal)	50hz to 18Khz
	Slim profile steel barrel	Flat response, low proximity effect	Ideal instrument Mic	\$199
<b>Electro Voice CO 5</b>	Vocals/Speech	Cardioid	Neodymium (Normal)	50hz to 18kHz
	Spherical filter,steel mesh grill		Presence peak suits vocals/speech	Top seller with on/cff switch \$99
<b>Electro Voice CO 7</b>	Vocals/Speech	Cardioid	Neodymium (Normal)	50hz to 18Khz
	Spherical filter,steel mesh grill		Flat response, low proximity effect	Also available on radio \$179
<b>Electro Voice CO 9</b>	Vocals	Cardioid	Neodymium (Normal)	50hz to 18Khz
	Spherical filter,steel mesh grill		Presence Peak suits Vocals	Traditional American Sound \$229
<b>JTS JM-X2</b>	Kick Drum	Super Cardioid	Neodymium Dynamic ("Ostrich egg")	20 to 12kHz
	H/D Shock mount, split axis mount		Exceptional LF response	cost effective bass instrument mic \$249
<b>JTS JM-X8</b>	Vocals	Cardioid	Neodymium Dynamic (Normal)	50 to 16.5kHz
	Shockmount w/ hardened mesh grill		High presence peak suits vocals	cost effective high output vocal mic \$189
<b>JTS NX-8</b>	Vocals	Cardioid	Neodymium dynamic (Normal)	50 to 16.5kHz
	Advanced shock mount, Mesh grill		Stunning vocal clarity No proximity	Exceptional low handling noise \$249
<b>JTS PDM3</b>	Vocals	Cardioid	Dynamic (Normal)	50 to 16.5kHz
	Shockmount w/ hardened mesh grill		Presence peak suits vocals	Best selling cost effective vocal mic \$139
<b>Peavey PVI</b>	Vocals	Cardioid	(Normal) 80Hz-12kHz	
	Excellent build quality for price		Excellent Intelligibility	On/Off Switch/Cord/Carry Case \$113
<b>Peavey PVM22</b>	Vocals	Cardioid	Neodymium (Normal)	50 to 16kHz
	Robust Build for Touring/Hire	Clean and Clear	Carry case & mic clip included	\$379
<b>Peavey PVM520I</b>	Instruments	Cardioid	Neodynamic (Normal)	45Hz-19kHz
	Superior Off Axis Rejection	Ultra High Sensitivity		\$889



Brand	Distributor	Contact	Sales	Web	Dynamic			Min/Headset		Capacitor
					Condensor	Ribbon	1	2		
Aeromic	Aerobic Microphones Aust	+61 2 9313-4995	www.aeromic.com.au	0	0	4				
AKG	Audio Products Australia	+61 2 9669-3477	www.audioproducts.com.au	21	37	3				
AMA	Aerobic Microphones Aust	+61 2 9313-4995	www.aeromic.com.au	0	0	4				
Apex	Dynamic Music	+61 2 9939-1299	www.dynamicmusic.com.au	12	10	0				
Audio technica	Yamaha Australia	+61 3 9693-5111	www.audio-technica.com	20	57	17				
Audix	Production Audio Services	+61 3 9415-1585	www.productionaudio.com.au	12	13	10				
Azden	LSW	+61 2 9568-2100	www.lswonline.com.au	2	1	8				
Behringer	MusicLink Australia	+61 3 9765-6530	www.musiclink.com.au	2	3	0				
Beyerdynamic	Network Ent Technology	+61 2 9905-5997	www.network-et.com	30	44	18				
Blue	Studio Connections Aust	+61 3 9874-7222	www.bluemic.com	0	8	0				
CAD	Australian Audio Supplies	+61 3 8415-1466	www.ausaudio.com.au	5	10	0				
Coles	Mixmasters Productions	+61 8 8278-8506	www.mixmasters.com.au	0	0	0	3			
Countryman	Production Audio Services	+61 3 9415-1585	www.productionaudio.com.au	0	0	9				
Crown	Jands	+61 2 9582-0909	www.jands.com.au	0	27	4				
DB technologies	CMI	+61 3 9315-3344	www.cmi.com.au	0	1	0				
DPA	D2a Pty Ltd	+61 2 9957-5389	www.dpamicrophones.com	0	10	15				
Earthworks	Australian Audio Supplies	+61 3 8415-1466	www.ausaudio.com.au	0	6	0				
Electro voice	EVI Audio	+61 2 9648-3455	www.eviaudio.com.au	4	2	6				
Joe meek	Mixmasters Productions	+61 8 8278-8506	www.mixmasters.com.au	0	3	0				
JTS	National Audio Systems	+61 3 9434-1888	www.nationalaudio.com.au	11	2	4				
Leon Audio	Aerobic Microphones Aust	+61 2 9313-4995	www.aeromic.com.au	0	0	3				
Neumann	Syntec International	+61 2 9417-4700	www.syntec.com.au	0	16	4				
Oktava	ATT Audio Controls	+61 3 9379-1511	www.attaudiocontrols.com	0	3	0	1	2		
Peak	CMI	+61 3 9315-3344	www.cmi.com.au	5	2	0				
Peavey	Audio Telex	+61 2 9647-1411	www.audiotel.com.au	8	5	0				
Rode	Rode	+61 2 876-9333	www.rodemicrophones.com	0	9	0				
Samson	Electric Factory	+61 3 9480-5988	www.elfa.com.au	4	1	0				
Sanken	John Barry Sales	+61 2 9439-6955	www.johnbarry.com.au	0	11	4				
SD systems	Kurt Jacob & Co	+61 2 9636-7111	www.sdsystems.com	2	2	0				
Sennheiser	Syntec International	+61 2 9712-3662	www.syntec.com.au	21	17	18				
Shaker	Kurt Jacob & Co	+61 2 9636-7112	www.shakermicrophone.com	44	0	0				
Shure	Jands	+61 2 9582-0909	www.jands.com.au	35	44	22				
Sony	Sony Australia	+61 2 9887-6666	www.sony.com.au/proaudio	6	4	8				
Soundelux	Awake Productions	+61 3 9819-4603	www.soundelux.com	0	5	0				
Stedman	Neotec Audio	+61 2 9873-3994	www.neotec.com.au	1	1	0				
Studio projects	Mixmasters Productions	+61 8 8278-8506	www.mixmasters.com.au	0	3	0				
T.h.e.	Awake Productions	+61 3 9819-4603	www.theaudio.com	0	5	0				

reflected by the sheer depth of product they stock. They all could have put in many more microphones if it was not for our limitation of four models per brand, so what you see here is what the distributor has either judged as being suitable for the Australian market and/or representative of the range they sell.

In terms of affordable dynamics aimed at live or work-a-day studio applications there is diverse number here. While value for money is subjective, when you are paying less than \$100 for a solid brand dynamic pro-microphone you are doing well. The Samson R11 is the lowest for a dynamic handheld at \$79 (with a neodymium capsule and frequency range of 60 Hz - 18 kHz - respectable figures at this price point) and the Apex 950 dynamic cardioid is not too far behind with has a list price of \$85, (80Hz-12kHz). Behringer too have some dynamic cardioids here in the \$89-99 mark. The ElectroVoice CO5 has a list of \$99 and the Peak drum mic-

(cont over)

Microphones

kit includes 7 microphones (two are condensers) for \$700 - and they throw in a roadcase + clips! Great value for owner operators.

In the \$110 to 200 range for dynamic cardioids is the Peavey PVI, the Shure PG58 - part of Shure's new line - the CAD 25 and JTS' PDM3. The field opens up further with mid range priced dynamic cardioids. Be prepared to hand over at least \$250 for a full specification performance microphone, with \$450 the average.

Many of the brands listed have a microphone in this range as well as Sony and Audio Technica. Some of the larger brands have either finessed what are already popular products, such as AKG's D112, or established compliment ranges such as Sennheiser's Evolution line which complements its professional range such as the MD421 and MD46.

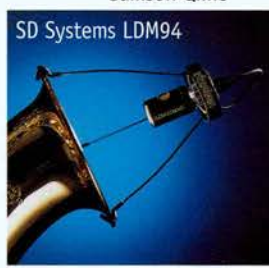
Here too Beyerdynamic's OPUS models works with their established M88, M99 and the Shure Beta range fits well with its traditional range that still includes the SM58. In terms of hand-held condensers, again Samson is cheapest in this report at \$189. The Apex 190 is \$225, the JTS NX-8.8 at \$299 and Audio Technica's ATM15A at \$310. In general \$400 is an average figure for the live/studio condenser vocal area such as CAD, Crown, Beyerdynamic, Shure, EV, Audio Technica in the \$400+ this mark with hand-held and specialist application condensers. Again, prices on

(cont over)

Microphone	Best for	Pattern	Capsule Type (Normal or Compact)	Response
Mechanical	Acoustics	Features	List price inc gst	
<b>Samson Q2</b>	Vocal/Instrument	Cardioid	Dynamic (Normal)	50 Hz - 15 kHz
Cardioid Neodymium	Miking vocals, amps, instruments			Carry case & mic clip included \$179
<b>Samson Q3</b>	Kick drum/Instrument	Hypercardioid	Dynamic (Compact)	50 Hz - 15 kHz
Hypercardioid Neodymium	Miking kick drum & instruments			Carry case & mic clip included \$199
<b>Samson Qmic</b>	Vocals	Hypercardioid	Dynamic (Normal)	20 Hz - 18.5kHz
Hypercardioid Neodymium	Precise for vocals & live sound			Great selling mic \$169
<b>Samson R11</b>	Vocals	Hypercardioid	Dynamic (Normal)	60 Hz - 18 kHz
Hypercardioid Neodymium	On/off switch & mic clip			Vocals cost effective mic \$79
<b>SD Systems LDM94</b>	Instruments - sax & trombone	Cardioid-uni		Dynamic (Compact) 70-15,000 kHz
shock free mount	Warm and less sharp sound ie sax		Direct XLR output	\$619
<b>SD Systems SDS Modular System</b>	Instruments - wind & brass	Unidirectional		Dynamic (Compact) 50-20,000 kHz
sound venting housing	Affordable pro mic			\$495
<b>Sennheiser E 609</b>	guitar amps	Cardioid	Neodymium (Compact)	40 16k
Compact, hangs over guitar cabs	Guitar cabinets			high spill rejection \$469
<b>Sennheiser E835s</b>	Vocals	Cardioid	Neodymium (Normal hand held)	40 16k
Steel, weighs 33g	Great for rock vocals			out manoeuvres traditional choice \$249
<b>Sennheiser MD421</b>	Recording studios, and live	Cardioid	Cardioid transducer (Normal)	30 to 17kHz
Rugged professional mic	Effective feedback rejection			5 pos bass roll-off switch \$838
<b>Sennheiser MD46</b>	Interviews, ENG	Cardioid	Cardioid transducer (Normal)	40-18kHz
Optimised for 'rough' use	Very insensitive to wind/popping			optimised frequency response \$421
<b>Shaker Crystal 1/4" Jack</b>	Harmonica	Cardioid	Dynamic (Compact)	30-11,000 kHz
Ergo.Shape black thermo resin	Foam pop filter (Internal)		Black	Vol Control, hi Z, cleaner sound \$185
<b>Shaker Dynamic 1/4" Jack</b>	Harmonica	Cardioid	Dynamic (Compact)	100-20,000 kHz
Ergo.shape black thermo resin	Foam pop filter (Internal)		Red	Vol Control, hi Z or low Z, Blues \$185
<b>Shaker Dynamic XLR</b>	Harmonica	Cardioid	Dynamic (Compact)	100-20,000 kHz
Ergo. Shape black thermo resin	Foam pop filter (Internal)		Red	Vol Control, hi Z or low Z, Blues \$199
<b>Shaker Madcat</b>	Harmonica	Dynamic (Very compact)		100-20,000 kHz
Shaped to fit in hand, Vol control	Acoustically inert case			Mics natural hand shaped sounds \$325
<b>Shure 55SH Series II</b>	Lead or Backup Vocal / Spoken Word	Cardioid	Dynamic (Large format Vintage Style)	50-15k
chrome-plated die-cast case	Tailored to accentuate clarity			Unique stage icon w/ '50's look & feel \$635
<b>Shure Beta58A</b>	Lead Vocal / Backup Vocal	Super-Cardioid	Dynamic (Std hand held)	50-16k
Rugged mic suitable for live vocals	Extremely smooth extended response			S-cardioid for max isolation on-stage \$589
<b>Shure PG58</b>	Lead Vocal / Backup Vocal	Cardioid	Dynamic (Std hand held)	60-15k
Rugged mic suitable for live vocals	Tailored to accentuate clarity			NEW Shure quality at attractive price \$149
<b>Shure SM58</b>	Lead Vocal / Backup Vocal / Harmonica	Cardioid	Dynamic (Std hand held)	50-15k
Rugged mic suitable for live vocals	Rugged mic suitable for live vocals			THE world standard R'n'R vocal mic \$429
<b>Sony F740</b>	Vocal, Instruments	Uni	Copper Clad Aluminum (Normal)	50 to 18kHz
Rugged capsule in a resilient body	Suits live vocal and instrument use			High performance, live use \$347
<b>Sony F780</b>	Vocals	Uni	Copper Clad Aluminum (Normal)	50 to 18kHz
Rugged capsule in a resilient body	Suits live vocal use			High performance, live vocal \$486
<b>Stedman N90</b>	Voice, percussion, guitar amps	Cardioid	Mylar (Large)	35 to 19kHz +/-3dB
Machined body, stainless steel mesh	>155 dB SPL, transformerless			Studio mic large diametre diaphragm \$950

Condenser

<b>AKG C1000S</b>	Vocals and Instruments	Cardioid / Hypercardioid with PPC1000	Condenser (Normal)	50 to 20kHz
Rugged construction for road use	Pristine response			Very low noise Int 9v battery and on / off switch \$549
<b>AKG C430</b>	High Hat and Overhead	Cardioid	Condenser (Miniature)	20 to 20kHz
Compact external dimensions	Freq response ensures crisp sound			Specifically designed for cymbals \$349
<b>AKG C451B</b>	Studio Instrument	Cardioid	Condenser (Normal)	20 to 20kHz
Integrated capsule and Pre-amp	Legendary CK1 capsule acoustics			2 level roll-off & pre-atten pads \$899
<b>AKG C900</b>	Vocals	Cardioid / Hypercardioid with PPC1000	Back Electrode (Normal)	20 to 20kHz
Duraflex spring steel wire-mesh cap	High gain before feedback			Studio qual gold sputt transducer \$399
<b>Apex 165</b>	Instrument/Brass	Cardioid	Condenser (Clip on instrument)	30 to 18000hz
Shock assembly & gooseneck clamp	High SPL 135dB			Unobtrusive clip-on mic \$315



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# Microphones

paper are only part of the story.

The studio microphone market is also competitive as shown by the extremely diverse models listed here. Alongside brands you would expect to see are other microphones that have not been covered by our market report before such as T.H.E Microphones, short for 'Taylor Hohendahl Engineering'. They have only been going since 1998 but already have a 12 model range of hi-specification studio microphones, and the only microphone here that uses wood as a construction component!, the BS-3D omnidirectional sphere.

Blue Microphones are the most unique in appearance yet are seriously specified studio devices. In this field something that stands out is an advantage hence colourful designs and model names such as 'Dragonfly' and 'Baby Bottle'. In this regard the Oktava brand is also interesting. In Russia's heyday Oktava were Russia's biggest manufacturer of microphones until the companies fortunes declined after *Glasnost*. In 1994 A & F Mckay, a British audio firm, released the MK219 studio cardioid in the west which, in short, led to a revitalisation of the entire Oktava range and the construction of some new valve and ribbon microphones. The MK219 is not a pretty microphone- it looks very 1950s Russia - but has received high praise for its performance.

Along with the Coles brand of microphone, Oktava have

(cont over)

Microphone	Best for	Pattern	Capsule Type (Normal or Compact)	Response	
Mechanical	Acoustics	Features	List price inc gst		
<b>Apex 190</b>	Vocal/Piano/Acoustic		Cardioid Condenser (Stubby/pencil)	70 to 17kHz	
	Scratch Resistant Anodized Finish	Flat-frequency response		Ideal for studio broadcast or live	\$225
<b>Apex 420</b>	Vocals	Cardioid/omnidirectional	Neodymium (Large)	50 to 20kHz	
	HD Aircraft Grade Machined Brass	Excellent side & back noise reject'n		Superior quality at high s.pressure	\$565
<b>Apex 430</b>	Vocals	Cardioid	Neodymium (Large)	50 to 20kHz	
	Machined Brass	Excellent side & back noise reject'n		Superior quality at high s.pressure	\$375
<b>Audio Technica AT3035</b>	Studio vocal		Cardioid Condenser (Large)	20 to 20kHz	
	Classic look & rugged construction	H/SPL 148dB extended response		10dB pad switch & shock mount	\$595
<b>Audio Technica AT4047SV</b>	Studio Vocals (Etc)		Cardioid Twin diaphragm capacitor (Large)	20 to 18kHz	
	Vintage look Transformer coupled out.	H/SPL 149dB & Extended response. With s/mount 10dB pad & bass r-off			\$1,495
<b>Audio Technica AT4050SH</b>	Studio Vocals (Etc)		Switchable Twin diaphragm capacitor (Large)	20 to 20kHz	
	Multi-pattern studio condenser. H/SPL 140dB	Extended response. With s/mount 10dB pad & bass r-off			\$1,695
<b>Audio Technica ATM33A</b>	Instrument		Cardioid Condenser (Normal)	30 to 20kHz	
	Precision Mic Outstanding linearity	H/SPL for vocal, percuss, piano etc		Excellent Quality. Excellent Value.	\$330
<b>Audix ADX50</b>	Instrument - Percussion		Cardioid Electret Condenser (Normal)	40Hz - 20kHz	
	Machined Brass, pencil style	Optional pad & roll off switch		Quality, road-worthy performance	\$645
<b>Audix SCX25</b>	Studio Vocals		Cardioid True Condenser (Normal)	20Hz - 20kHz	
	Machined Brass	Minimal acoustic reflections		Unique capsule shock mounting	\$1,995
<b>Audix UEM81-s</b>	Instrument - Recording		Cardioid & Supercardioid	Electret Condenser (Normal/long)	20Hz - 20kHz
	Aluminium	Normal & Shotgun capsules incl'd		Shotgun windscreens included	\$645
<b>Audix VX10</b>	Vocals	Cardioid	True Condenser (Normal)	40Hz - 20kHz	
	Die cast zinc body	Brass caps housing	Max SPL 138dB	Excellent with in-ear monitors	\$1,595
<b>Azden SGM2X</b>	Video & Audio		Super cardioid shotgun	(Dual mics (large & small))	40 to 20 kHz
	2 Mic Barrels supplied	Low cut filter, Low noise		Interchangeable barrels	\$529
<b>Behringer B1</b>	Vocals	Cardioid	Single Diaphragm Condenser (Large)	20 Hz to 20 kHz	
	Diaphragm Condenser, Shock Mount	138dB SPL, Low Inherent Noise		Comes With Rugged Hard Case	\$399
<b>Behringer B2</b>	Vocals & Wide Range of Applications		Selectable Cardioid or Omni-directional	Dual Diaphragm Condenser (Large)	20Hz - 20kHz
	Dual Diaphragm, Shock Mount	High Pass Filter & -10dB Pad		Comes With Rugged Hard Case	\$699
<b>Behringer ECM8000</b>	Measurement Mic		True Omni-directional	Electret Condenser (Normal)	15 Hz - 20 kHz
	Small Shot Gun Style	Suited for acoustic measurements		Linear Frequency Response	\$199
<b>Beyerdynamic MCE90</b>	Studio		Cardioid Condenser (Large)	30 - 20,000 Hz	
	Rugged Diecast Housing	Natural vocal sound		Great all round studio tool	\$849
<b>Beyerdynamic OPUS81</b>	Vocals/Instruments		Cardioid Condenser (Normal)	50 - 18,000 Hz	
	Slim line - Steel mesh grill	Wide linear frequency response		Up to 138dB with faithful response	\$549
<b>Beyerdynamic OPUS83</b>	Overheads/ Hats		Cardioid Condenser (Compact)	40 - 20,000 Hz	
	Compact Slim line Lightweight	Spatial natural sound		Strong design - very roadworthy	\$429
<b>Beyerdynamic OPUS87</b>	Snare/Rack		Cardioid Condenser (Compact)	30 - 20,000 Hz	
	Drum Clamp + Gooseneck	Natural sound reproduction of drums		Excellent on any acoustic perc.	\$399
<b>BLUE Microphones Baby Bottle</b>	Acoustic Instruments & Vocals		Cardioid Directional (Normal)	20kHz 20Hz	
	Solid State Class A Suit Vocals and Percussion	Huge Vocal Sound			\$1,695
<b>BLUE Microphones Blueberry</b>	Vocals		Directional	Cardioid (Large)	20Hz 20kHz
	Large Diaphragm Cardioid	Excellent Vocals & Voice Over Mic		High Quality Reproduction	\$3,250
<b>BLUE Microphones Dragonfly</b>	Vocals Percussion & Instrumental		Cardioid Directional (Large)	20Hz 20kHz	
	Class A Mic/Transformerless Output	Suits Percussion & Drums		Excellent Instrument Microphone	\$2,750
<b>BLUE Microphones Mouse</b>	Vocals & Voice		Directional Pattern	Cardioid (Compact)	20Hz 20kHz
	Single Pattern Cardioid Hand Built	Using High Quality Componentry		Great for broadcast & vocals	\$4,250
<b>CAD 95</b>	Vocals and instruments		Cardioid Electret (Normal)	40Hz-30kHz	
	Transformerless = gd LF response	Max SPL 130dB (1% THD open c)		Internal multi-stage pop filter	\$399
<b>CAD M179</b>	Vocal, studio	Variable (Omni-Figure 8)	Five detented, nine overall	Externally biased (Normal)	10Hz-20kHz
	L.noise amp h/efficiency pwr circ.		Low dist.& fast transient response	Switch. 80Hz HP Filter & 20dB Pad	\$795
<b>CAD ICM417</b>	Overhead, percussion		Cardioid Electret (Compact)	40Hz-20kHz	
	Slim aluminium body	Provides low noise, high output		Shock isolation clip included	\$299
<b>CAD VSM1</b>	Vocal, instruments, studio applications		Cardioid Tube (Normal)	10Hz-20kHz	
	Servo-valve Optema OS110 cap.	Low noise, low distortion		Analog power supply included	\$2,595



Microphone	Best for	Pattern	Capsule Type (Normal or Compact)	Response
Mechanical	Acoustics	Features	List price inc gst	
<b>Crown CM-150</b>	Recording & Measurement	Calibrated frequency response	Omn-directional Condenser (Normal)	20 to 20kHz
			High precision microphone	18-48V phantom power \$2,995
<b>Crown PCC-160</b>	Speech	Supercardioid	Condenser (Boundary, Normal)	50 to 18kHz
	Industry standard stage floor mic	Phase coherent pick up	12-24V phantom power	\$1,035
<b>Crown PZM-11LL</b>	Security & Surveillance	Half-omnidirectional	Condenser (Boundary, Normal)	80 to 20kHz
	Mic that looks like a light switch	Balanced, line level output	AC, DC or 12-48V phantom power	\$429
<b>Crown SASS-P MK11</b>	Stereo imaging	Omn LF/Uni HF	Dual Condenser (PZM, Large)	20 to 18kHz
	PZM stereo microphone	100Hz rolloff switch	12-48V phantom or 2 x 9V battery	\$3,295
<b>DB Technology DB-560N</b>	Vocals	9 selectable polar patterns	Valve Mic (Normal)	20Hz-20kHz
	dual 1" diaphragm reduces proximity effect	10db pad & low cut switches		\$1,249
<b>DPA Microphones DPA4006</b>	Any application	Omn-directional	Pre-polarised (16mm diaphragm)	20Hz-20kHz
	Low noise-High sensitivity	High SPL version also avail.		\$2,682.23
<b>DPA Microphones DPA4011</b>	Any application	Cardioid	Pre-polarised 19mm (Normal)	40Hz-20kHz
	End address	High voltage version also avail.		\$3,104.33
<b>DPA Microphones DPA4023</b>	Any application	Cardioid	Pre-polarised as in DPA4011 (Compact - 50mm long)	50 to 15kHz
	Wide range of mounting options			\$2,484.59
<b>DPA Microphones DPA4041</b>	Any application	Omn	High voltage pre-polarised (1" End-End address)	10Hz-20kHz
	Valve or transistor preamp avail.			\$8,300
<b>Earthworks QTCI</b>	Instruments, ambient	Omn	Electret (Sleek and narrow)	4Hz-40kHz
	Crafted stainless steel body	Flat, extended response	Very high sens.& low self noise	\$2,395
<b>Earthworks SR71</b>	Instruments	Cardioid	Electret (Sleek and narrow)	50Hz-20kHz
	Crafted stainless steel body	Beautiful w/exnt off-axis rejection	Rejects dist.bass popular choir mic	\$1,095
<b>Earthworks SR77</b>	Instruments	Cardioid	Electret (Sleek and narrow)	30Hz-30kHz
	Crafted stainless steel body	Open, uncoloured sound	Suited to a w/range acoustic insts.	\$1,495
<b>Earthworks TC30K</b>	Louder Instruments	Omn	Electret (Sleek and narrow)	9Hz-25kHz
	Crafted stainless steel body	clean impulse response	For louder music - pianos-kick drm	\$1,295
<b>Electro Voice RE 200</b>	Instruments	Cardioid	Condenser (Normal)	50Hz to 18kHz
	Slim Profile Pencil style	Low proximity, ideal for instruments	Flat response, phantom required	\$700
<b>Electro Voice RE 510</b>	Vocals	Supercardioid	Condenser (Normal)	50Hz to 18kHz
	Spherical filter, steel mesh grill	Tailored for exacting vocals	Excellent off axis rejection	\$950
<b>Joe Meek JM-47</b>	Vocals / Amps	Cardioid	1" single diaphragm (Normal)	20-20,000 Hz
	Supplied w/ Shock Mount and Case	Max SPL 136 dB, Low noise	includes -10dB pad and 100Hz filter	\$746
<b>Joe Meek JM478</b>	Vocals / M-S miking	Fig 8 / Cardioid	1" gold diaphragm (Normal)	20-20,000 Hz
	Supplied w/ Shock Mount and Case.	Max SPL 136 dB, Low noise.	Dual powered capsule for perfect fig8	\$1,388
<b>JTS NX-8.8</b>	Vocals	Cardioid	Condenser (Normal)	60 to 18kHz
	Effective shockmount and filter design	High sens. Accurate for studio & live	Cost-effective condenser vocal mic	\$299
<b>JTS NX-9</b>	Instruments	Cardioid	Condenser (Thin)	60 to 18kHz
	Effective shockmount and filter design	Ideal for overhead & close-mic apps	Cost-effective conds instrument mic	\$299
<b>Neumann KMS105</b>	On stage vocals, in ear systems	Supercardioid	DC polarized capsule (normal)	20Hz to 20kHz
	supplied with clamp, and padded bag	4 layer acoustic filter	Without off-axis coloration	\$985
<b>Neumann M147 (Tube)</b>	Vocalist/announcer/spot mic	Cardioid	Dual Pressure gradient (Large)	20Hz to 20kHz
	Tube mic with swivel stand mount	3dB boost above 2kHz	Low Self noise level	\$3,745
<b>Neumann TLM103</b>	Vocalist/broadcast/home recording	Cardioid	Pressure gradient (Large)	20Hz to 20kHz
	includes swivel mount	4dB presence boost above 5kHz	excellent impulse response	\$1,640
<b>Neumann U87Ai</b>	Vocalist/announcer/spot/o/head	Cardioid, Fig 8, omni	Dual Pressure gradient (Large)	20Hz to 20kHz
	Variable large diaphragm microphone	Switchable patterns & 10dB pad.	Increased operational headroom	\$3,690
<b>Oktava MK219</b>	Multi Purpose	Cardioid	Large Gold Plated Diaphragm True Condenser (Normal)	30Hz to 19KHz
	Matt black, rhombically shaped	High sensitivity	Switchable 10 db pad and HP filter	\$499
<b>Oktava MK2500</b>	Vocals	Cardioid	33mm Gold Condenser Capsule (Normal)	30Hz to 19KHz
	Uses famous Russian 6C315-P Tube	Classic warm vintage sound	Includes case & Power Supply	\$1,869
<b>Oktava MK319</b>	Multi Purpose	Cardioid	Large Gold Plated Diaphragm True Condenser (Normal)	30Hz to 19KHz
	Matt black, spherical shaped	Gentle presence rise	Switchable 10 db pad and HP filter	\$699
<b>Peavey PM165</b>	Vocal	Cardioid	Permanantly Polarized Condenser (Normal)	50Hz-20kHz
	Variety of Mounting Options	G'Neck Mic. Excel., Intelligibility	Shock Mount, Hum and RF Shielding	\$672
<b>Peavey PVM480</b>	Instruments	Super Cardioid	Back Electret (Normal)	40Hz-20kHz
	Rugged Construction	Flat Frequency Response	Carry Case and Cable Included	\$620
<b>Rode NT1000</b>	Vocal / Instr.	Cardioid	Externally Polarized (Large)	20 - 20kHz
	Heavy Duty satin nickel body	Superior for Vocals & Instruments	Ultra Low Noise; True Condenser	\$995
<b>Rode NT4</b>	Stereo Recording	Twin-Cardioid	Externally Polarized (Normal)	20 - 20kHz
	Two Capsules in XY arrangement	Designed for True Stereo Recording	Stereo Mic - Twin XLR & Mini Jack	\$995
<b>Rode NT5</b>	Instruments	Pair - Cardioid	Externally Polarized (Compact)	20 - 20kHz
	Pair of discreet instrument mics	Tailored Response for Instruments	Matched Pair; Discreet Size	\$895
<b>Rode NTK</b>	Vocal / Instr.	Cardioid	Externally Polarized (Large)	20 - 20kHz
	High strength steel mesh head	Ultra quiet Valve Microphone	Hand selected Twin Triode Valve	\$1,495
<b>Samson Q1</b>	Vocals	Cardioid	Condenser (Normal)	50 Hz - 20 kHz
	Condenser mic with shock element	Tight cardioid reduces feedback	Withstands high SPL's	\$189
<b>Sanken CU-31</b>	Music Recording	Axis Direction	Titanium Membrane (Compact)	20Hz to 18kHz
	Small, Lightweight Stand Mount	Natural, Uncoloured Sound	148db Max Spl, Gold 3 Pin Xlr	\$1,580.70
<b>Sanken CU-32</b>	Music Recording	90 Degree Direction	Titanium Membrane (Compact)	20Hz to 18kHz
	Small, Lightweight Stand Mount	Natural, Uncoloured Sound	148db Max Spl, Gold 3 Pin Xlr	\$1,580.70
<b>Sanken CU-41</b>	Digital Audio Recording, Broadcasting, Tv, Film	Cardioid	Titanium Membrane (Large)	20Hz to 20kHz
	Large, Shockmount-Supplied	Double Condenser, Uncoloured Sound	140db Max Spl, Gold 3 Pin Xlr	\$5,318.50



Crown PCC-160

Crown CM-150



Crown SASS-P Mk11



DB Technology DB-560N



DPA Microphones DPA4011

DPA4023



Earthworks QTCI



Neumann KMS105



Neumann M147 (Tube)



NT4



NT5



NTK



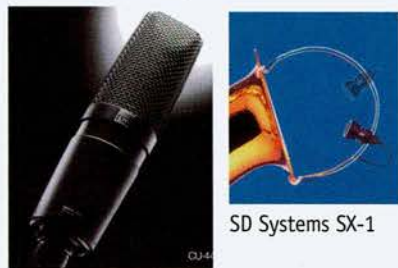
NT1000

one of the few ribbon microphones for sale in Australia. More conventional but also with exceptionally refined engineering is the Soudelux range of 'classic' looking hi-end tube and FET studio microphones. They have recently released the E47 vintage studio condenser at NAMM.

Also new to the Connections report are microphones from Studio Projects, Joe Meek, Coles, Sanken, Rode all designed for hi-end accurate acoustic imaging. This is highly competitive market and these brands are listed alongside studio microphones from Neumann, Sony, DB Technologies, CAD, Earthworks, Beyerdynamic, Shure, Sennheiser, AKG, Stedman, Audio Technica,

**Microphones**

Aphex and Electro Voice. Again, each have their unique selling point but all are guaranteed of quality acoustic performance. In this area too there is a microphone for each studio application to further complicate matters. The price range for a good studio microphone starts at around \$350 to \$10,500 and a close study of reported performance and specifications is advised to ascertain subtle differences. On the smaller end of the spectrum, special purpose microphones such as Norwegian manufacturer SD Systems come into the report for the first time with a set of pro-quality brass and wind instrument microphones.



SD Systems SX-1

Sanken CU-44X



Sennheiser K6 Modular system



Sennheiser MKH20



Shure KSM44



Shure SM81



Sony C48

Sony C800G



AKG C420

Microphone	Best for	Pattern	Capsule Type (Normal or Compact)	Response
Mechanical	Acoustics	Features	List price inc gst	
<b>Sanken CU-44X</b>	Digital Audio Recording, Broadcasting, Tv, Film	Cardioid	Titanium Membrane (Large, Must Be Used With P-44x Psu)	145db Max Spl, Gold 4 Pin Xlr \$4,958.80
<b>SD Systems LCM85</b>	Instruments - wind & brass	Cardioid-uni	Condenser (back electret) (Compact)	50-20,000 kHz shock free mount Clean pure natural sound LP preamp included \$698
<b>SD Systems SX-1</b>	Instruments - sax & trumpet	Unidirectional	Condenser (Compact)	150-20,000 kHz built-in windscreen Max SPL: 140dB L.weight pre- included w/vol control \$359
<b>Sennheiser E 664</b>	choirs or instruments	Cardioid	Electret (Small shot gun)	30 18k Capsule and psu interchangeable Overheads or choirs interchangeable capsules \$669
<b>Sennheiser E865</b>	Vocals	Cardioid	Electret (Normal)	30 18k Rugged professional mic Great vocal for singing or speech highly robust condenser mic \$699
<b>Sennheiser K6 Modular system</b>	Depends on capsule fitted.	5 Mic head patterns avail (ME range).	Back Electret (Compact)	20 to 20kHz. Mini-lavalier to shotgun capsules. Switchable bass roll-off. AA Batt or 48V phantom power from \$900
<b>Sennheiser MKH20</b>	Orchestras and solo instruments	Omni	RF Condenser (Normal)	12 to 20kHz Switchable pad, and correction Transparent, colorless 48V phantom power \$2,795
<b>Shure KSM44</b>	Studio Vocals, Ensemble vocals, Voiceover, Strings, Acoustic Guitar, Piano, Strings, Cymbals, Woodwind	Switchable Omni, Cardioid, or bi-directional	Dual large diaphragm (Large format, side address)	20-20k. Hardened steel grille, 3-stage pop filter. F/response w/ 3 position LF roll-off . E.wide bandwidth, L.noise & high SPL \$2,495
<b>Shure MX412</b>	Spoken word. Available in Omni, Cardioid or Super-cardioid	Miniature Condenser (Gooseneck)	50-17k Goosneck. Desktop/side exit avail. Tailored for clarity Options include mute switch & LED \$660	
<b>Shure PG81</b>	Acoustic Guitar, Cymbals, Piano, Strings, Woodwind, Ensembles	Cardioid	Condenser (Normal)	40-18k tube style mic Flat On/off switch. Phantom or battery \$1,221
<b>Shure SM81</b>	Acoustic Guitar, Bass, Strings, Piano, Woodwind, Orchestra, Cymbals, Sampling	Cardioid	Condenser (Normal)	20-20k. tube style mic F/response w/ 3 position LF roll-off 10dB pad Standard for acoustic inst \$349
<b>Sony C48</b>	Studio	Uni/Omni/Bi	Gold condenser (Large)	30 to 16kHz Upright studio condenser FET amp High gain, low noise Switchable directivity \$2,678
<b>Sony C800G</b>	Critical Vocal	Uni/Omni	Gold condenser (Large)	20 to 18kHz Heat transfer valve amp High gain, low noise Switchable directivity \$10,500
<b>Soundelux E47 NEW</b>	vocal and instrument applications	Variable pattern	Tube (NEW)	NEW Low noise floor For vintage 47 sound Includes spider Shockmount \$7,000
<b>Soundelux ELUX 251</b>	Vocals / General Applications	Multipattern Omni / Fig 8 / Cardioid	1" dual membrane (2.06" x 8.5" )	20Hz-20kHz. Tube type: 6072A. Max SPL 132dB .5% THD @ 1kHz. Sensitivity 15mV/Pa (-36dBV/Pa) \$9,900
<b>Soundelux U195</b>	Vocals / General Applications	Cardioid	Capsule size: 1" (2.09" x 7.7" )	10-20kHz Quality manufacture Max SPL: 125dB @0.5% With wood mic box & shock mount \$2,500
<b>Soundelux U955</b>	Vocals / General Applications	Multipattern Omni / Fig 8 / Cardioid	Tube (2.06" x 10.65")	20Hz-20kHz Tube type: EF86 Max SPL 128dB .5%THD@1kHz. Includes 6 pin XLR cable, AC cable, donut shock mount, and flight case. \$6,900
<b>Stedman SC3</b>	Voice, acoustic instruments	Cardioid	Gold sputtered mylar (Large)	25 to 20kHz Machined body, stainless steel mesh 3 modes: Vintage/enhanced/bass cut Natural or warm coloured response \$1,895
<b>Studio projects C-1</b>	Vocals / Amps	Cardioid	6um single diaphragm (2.1" x 8.9")	20~20,000 Hz Supplied w/ Shock Mount and Case Max SPL 131 dB, Low noise Excellent Value Condenser Mic \$649
<b>Studio projects C-3</b>	Vocals / General Applications	Multipattern Omni / Fig 8 / Cardioid	6um dual diaphragm (2.1" x 8.9")	20~20,000 Hz. Supplied w/ Shock Mount and Case. Max SPL 142 dB, Low noise. Versatile Multipattern Mic \$989
<b>Studio projects T-3</b>	Vocals / General Applications	Multipattern Omni / Fig 8 / Cardioid + intermediate patterns	6um dual diaphragm (2.1" x 8.9")	20~20,000 Hz. Supplied w/ Shock Mount and Case. Max SPL 125 dB, External PSU. Tube Mic, great for Vocals \$1899
<b>T.H.E. Microphones BS-3D</b>	Binaural applications/instruments choirs	Omni-directional sphere	Pressure-transducer (160 mm sphere)	20 - 20,000 Hz Precision parts, Wood housing Smooth, 3-dimens.stereo sound Ultra-fast electronics \$5,400
<b>T.H.E. Microphones KR-1D</b>	Instruments	Omni-directional	Small Diaphragm Condensor (Small)	20 - 20,000 Hz Design eliminates proximity-effect Has great "reach and capture" KA-04 Pre-amp Body required \$700
<b>T.H.E. Microphones KR-25A</b>	Instruments/vocals	Cardioid	25mm Capsule (Small)	20 - 20,000 Hz Construction uses new compound Max SPL: 140 dB-SPMakes instruments sound BIG \$1,090
<b>T.H.E. Microphones KR-2W</b>	Instruments	Wide Card	Condensor (Small)	20 - 20,000 Hz Design eliminates proximity-effect Max SPL for 0.5% THD 135 dB-SP KA-04 Pre-amp Body required \$700

**Miniature and Headset**

<b>Aeromic AM10H</b>	Fitness Instructors, Dance Teachers	Omni	Electret Condenser (Headworn Mic)	30-15kHz 7mm sq. capsule on 1 piece frame High mechanical isolation sweat resistant h-mic/guaranteed \$495.00
<b>Aeromic AM12H</b>	Theatre and Public Speaking	Omni	Electret Condenser (Headworn Mic)	30-16kHz 7mm sq. capsule on 1 piece frame H/mechanic isolation Wide p/u range Sweat tolerant/all steel cable \$396.00
<b>Aeromic AM15</b>	Theatre and Public Speaking	Omni	Electret Condenser (Hairline or Tieclip)	30-16kHz 6mm sq. flat capsule w/1.2m cable High mechanical isolation Sweat tolerant/black or beige cable \$297.00
<b>Aeromic AM22HB</b>	Vocalist, Theatre and Public Speaking	Cardioid	Electret Condenser (Headworn Mic)	60-16kHz 7mm sq. capsule on 1 piece frame Wide sweet spot Hi SPL, predictable Headmic \$495.00
<b>AKG C420</b>	Vocals	Cardioid	Condensor (Miniature)	20 to 20kHz Adjustable headband fits any performer Brilliant & detailed sound quality Miniature g.neck w/ext s.mount \$419
<b>AKG C444L</b>	Vocals	Cardioid	Condensor (Miniature)	20 to 20kHz Ergonomic behind the neck headband Quality sound reproduction Shield resists perspiration \$189
<b>AKG C477</b>	Vocals	Omni-directional	Dual Transducer (Miniature)	20 to 20kHz Light weight low profile headset Broadcast and Stage quality Res. humidity, persp & corrosives \$899
<b>AMA V*MIC VE-747 PigTail</b>	Public Speaking and Vocals. Supercardioid.	Back Electret Condenser (Headworn Mic)	100-18kHz Mic capsule on g.neck, adjustable. High rejection of surrounding noise. Reinforced g/neck frame joint \$308.00	



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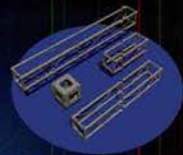
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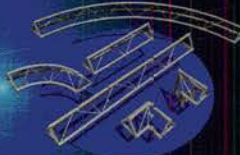


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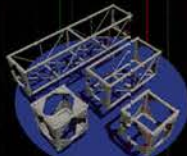
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**Microphones**

So too American made Shaker Microphones. They make exclusively harmonica microphones used by players such as Lazy Lester, Fingers Taylor, Steamin' Stan Ruffo, oh, and Junior Wells and Charlie Musselwhite.

In terms of theatre/broadcast sub-miniature applications DPA, Countryman, Sennheiser, Shure are represented here joined by Australian made Leon Audio and Aeomic, and also Japanese made Sanken brand, found more often in TV film applications. Also oriented towards film sound is the Azden shotgun microphone and the Sanken range is well known in broadcast industries. We have attempted to contact most suppliers of microphones in the Australian market so please contact us if you know of other brands not listed here.

- Compiled by Dan Grafton.



<b>AMA V*MIC VE-748 PigTail</b>	Pro-Vocals, Theatre & Public Speaking	Cardioid	Back Electret Condenser (Headworn Mic)	50-18kHz	around \$350
<b>AMA V*MIC VF-60 PigTail</b>	TV & Theater Performance	Mic Omni	Electret Condenser (Headworn Mic)	50-18kHz	
	2.5mm capsule/g.neck/"wire" h.band	Outstanding Clarity & Natural Sound	Very thin headworn theatre mic		\$440
<b>AMA V*MIC VL-5200</b>	Theatre and Public Speaking	Omni	Back Electret Condenser (Tieclip or Lavalier)	20-20kHz	
	Flat capsule on 1.4m cable	Good mechanical isolation	Available in black or beige	\$165.00	
<b>Audio Technica AT853A</b>	Choir/orchestral	Cardioid	Condenser (Miniature)	30 to 20kHz	
	Tiny hanging mic for choir & orchs.	Switchable bass roll-off	Ideal with 8451 for suspension rec	\$495	
<b>Audio Technica ATM15A</b>	Voice/instrument	Cardioid	Condenser (Lavalier)	40 to 20kHz	
	W/tie clip for lavalier & inst.	Acous guitar piano violin, vocal Lav.	Battery & Phantom Power	\$310	
<b>Audio Technica ATM35</b>	Brass/reeds	Cardioid	Condenser (Miniature)	30 to 20kHz	
	UniMount attaches directly to inst.	Crisp & clear at high SPL	Doesn't interfere with mutes. Clip on	\$485	
<b>Audio Technica ATM75</b>	Voice	Cardioid	Condenser (Miniature)	60 to 15kHz	Headset mic Boom either LH or RH side
	Outstanding, crisp reproduction	With belt mounted power & w/screens	\$275		
<b>Audix ADX118</b>	Lectern	Cardioid, Hypercardioid, Omni	Electret (18" slim)	40Hz - 20kHz	
	Machined Aluminium & Brass	Smooth uniform response	Interchangeable caps ADX models	\$475	
<b>Audix ADX20</b>	Lavalier	Cardioid, Hypercardioid, Omni	Electret (Miniature)	40Hz - 20kHz	
	Machined Brass	Wired and Wireless versions	Interchangeable caps ADX models	\$499	
<b>Audix ADX40</b>	Hanging Choir Mic	Cardioid, Hypercardioid, Omni	Electret (Miniature)	40Hz - 20kHz	
	Machined Brass	Supplied with 30 foot cable	Interchangeable caps ADX models	\$485	
<b>Audix HT-1</b>	Headset	Hypercardioid	Electret (Miniature)	50Hz - 18kHz	
	Molded composite	Light weight	Can be used with wireless systems	\$495	
<b>Azden CM 20</b>	Vocals	Uni-directional	(Collar mic)	30 Hz to 18 KHz	
	Adjustable collar mic	-48dB @ 1 KHz	Flexible collar	\$109	
<b>Azden HS11</b>	Vocals	Uni-directional	(Headset)	30 Hz to 18 KHz	
	Boom mic with headset speaker	-48dB @ 1 KHz	Multi purpose	\$109	
<b>Azden HS9</b>	Vocals	Omni-directional	(Compact headset)	30 Hz to 18 KHz	
	Mini Headset	-46 dB @ 1 KHz	Multi purpose	\$49	
<b>Beyerdynamic MCE5</b>	Vocals/Inst	Omni-directional	Condenser (Lavalier)	35 - 20,000 Hz	
	Small clip on	Wide freq. Range+natural response	Small unobtrusive design	\$399	
<b>Beyerdynamic MCE50</b>	Vocals, Speech	Hypercardioid	Condenser (Lavalier)	35-18,000 Hz	
	Low mechanical noise	High Sensitivity	Ext freq, low popping, low noise	\$319	
<b>Beyerdynamic OPU554</b>	Vocals	Cardioid	Condenser (Headset)	40-20,000 Hz	
	Unobtrusive Neckworn	High gain before feedback	Lightweight, angled head	\$299	
<b>Beyerdynamic OPU564</b>	Vocals	Hypercardioid	Dynamic (Headset)	40 - 12,000 Hz	
	Headworn Vocal	High gain before feedback	Comfortable, lightweight	\$299	
<b>Countryman B3</b>	Lavalier	Omni (Miniature)	20Hz - 20kHz		
	small and light weight	Suits most wireless systems	Black, grey, white, L.beige & cocoa	\$595	
<b>Countryman B6</b>	Lavalier	Omni (Micro (2.5mm))	30Hz - 20kHz		
	Ultra small and light weight	Suits most wireless systems	Black, grey, white, L.beige & cocoa	\$995	
<b>Countryman E6</b>	Headset	Omni (Micro (2.5mm))	50Hz - 20kHz		
	Clamps around 1 ear	Extremely light and stable	Detachable cable	\$1,175	
<b>Countryman Isomax Headset</b>	Headset	Cardioid, Hypercardioid, Omni (Miniature)	20Hz - 20kHz		
	Light weight	Good feedback rejection	Black or light beige	\$710	
<b>Crown CM-311A</b>	Vocals	Differoid	Condenser (Headset)	50 to 17kHz	
	Lightweight rugged comfortable	Exceptional gain before feedback	Wired and wireless versions	\$985	
<b>Crown CM-312A</b>	Vocals	Hypercardioid	Condenser (Headset)	50 to 17kHz	
	Lightweight rugged comfortable	Great for lecturers	Wired and wireless versions	\$935	
<b>Crown GLM-100</b>	Instrument/Vocals	Omni-directional	Condenser (Miniature)	20 to 20kHz	
	Compact and rugged	Smooth wide frequency response	Wired and wireless versions	\$705	
<b>Crown GLM-200</b>	Instrument/Vocals	Hypercardioid	Condenser (Miniature)	60 to 20kHz	
	Compact and rugged	Improved gain before feedback	XLR output	\$805	
<b>DPA Microphones DPA4060</b>	Presenters, actors & singers	Omni	Pre-polarised Electret (Lavalier)	20Hz-20kHz	
	Humidity resistant capsule	Choice of grids offer top end boost	Black, flesh or white	\$572.00	
<b>DPA Microphones DPA4061</b>	Presenters, actors & singers	Omni	Pre-polarised electret (Lavalier Low sensitivity)	20Hz-20kHz	
	Humidity resistant capsule	Lower sensitivity version of 4060	Black, flesh or white	\$572	
<b>DPA Microphones DPA4065</b>	Singers, corporate speakers	Omni	Pre-polarised Electret (Headset)	20Hz-20kHz	
	Humidity resistant capsule	As for DPA4061	Flesh or black. Left or right side	\$880.00	
<b>DPA Microphones DPA4066</b>	Singers, Corporate Speakers	Omni	Pre-polarised Electret (Headset)	20Hz-20kHz	
	Adjustable headband	Choice of grids offer top end boost	Flesh or black	\$997.33	
<b>JTS MC745 Head worn mic</b>	Aerobics & lecture	Cardioid	Electret condenser (Headset)	60 to 15kHz	\$369
<b>Leon Audio LSM1000</b>	Miking Loud, Hi SPL Instruments	Omni	Electret Condenser (Hairline)	20Hz - 20kHz	
	±3dB (into 2000 ohm load).	7mm round capsule on 2.3m cable.	High mechanical isolation. Phantom power/ XLR/ LED	\$340	
<b>Leon Audio LSM50C</b>	Miking delicate Instruments	Omni	Electret Condenser (Hairline)	20Hz - 20kHz ±3dB (into 2000 ohm load)	
	7mm round capsule on 2.3m cable.	High mechanical isolation. Phantom power/ XLR/ with LED	\$300		
<b>Leon Audio LSM900</b>	General Purpose, Choral & Public Speaking	Omni.	Electret Condenser (Hairline or Tieclip).	20-20kHz	
	±3dB (into 2000Ω load).	7mm round cap. on 2.3m cable.	H/mechanic isolation Wide p/u range. Phantom power/XLR/LED	\$300	
<b>Neumann KM100 mic system</b>	Miniature mics with active capsules.	7 interchangeable capsules.	Pressure/pressure gradient (Miniature).	20-20kHz.	Huge range of accessories available. 10dB attenuation on P/supply. Modular, invisible for TV etc. \$varies
<b>Neumann KM183</b>	Close miking, AB Stereo pair, spotting	Omni	Pressure Transducer (Miniature)	20Hz to 20kHz	
	Slender, compact, clamp, w/sock	7dB boost at 10KHz in free field	Economy production & home rec'g	\$1,235	
<b>Neumann KM184</b>	XY pair, announcer, spot, close miking	Cardioid	Pressure gradient (Miniature)	20Hz to 20kHz	
	Slender, compact, clamp, w/sock	gentle rise at 9kHz	Economy production & home rec'g	\$1,180	

If reactions from the visitors and exhibitors at this year's ENTECH are anything to go by, the 2002 show was the best ENTECH yet staged. While there were a couple of justified gripes (see the letters section), the vast majority of those that attended thought the show to be quite excellent. For those of you that were not able to attend, Mandy Jones has picked out some of the lighting highlights...

### ULA

Best Stand winners, ULA created a laid-back ambient feel with **AVR Colourmaster ARC Screens** providing a changing colour backdrop to their display. The screens feature eight rich colours plus white and have an internal dimmer and adjustable flash rate.

Using an MBI 150 watt discharge lamp, the screens can be controlled via DMX or through their internal memory. The colour changing panel system was also voted best new Lighting Product by Entech visitors.

The stand featured a number of new products including Best AV product winner from High End - the **Catalyst**. The orbital movement system mounts to the front of a video projector as a way of achieving automated movement. Static and moving images can be projected within a 360° by 180° hemisphere of movement, and inbuilt effects can manipulate the images.

The greatly anticipated new **WholeHog III**



Part of the ULA stand with the award winning High End Systems Catalyst silhouetted on the left.

<b>Neumann KM185</b>	XY pair, overheads, avoiding off-axis (lateral and rear). Hyper-Cardioid. Pressure gradient (Miniature)	20-20kHz. Slender, compact, clamp, w/sock. attenuation at sides/rear of 10dB. Economy production & home rec'g.	\$1,235
<b>Sanken COS-11PT "Red Mark"</b>	Theatre, Tv, Eng, Film, Live Omni Back-Electret Condenser (Ultra Miniature Lavalier)	20-20kHz. Unique Vertical Diaphragm Layout. Freq Response Adj To Human Voice. 134dB, Wired For Rad Mic	\$550
<b>Sanken COS-11PT Black (Pigtail)</b>	Theatre, Tv, Eng, Film, Live. Omni. Back-Electret Condenser (Ultra Miniature Lavalier)	20-20kHz. Unique Vertical Diaphragm Layout. Freq Response Adj To Human Voice. 123dB, Wired For Radio Mic	\$550
<b>Sanken COS-11s</b>	Theatre, Tv, Eng, Film, Live Omni Back-Electret Condenser (Ultra Miniature Lavalier)	20Hz to 20kHz Unique Vertical Diaphragm Layout. Freq Response Adj To Human Voice. 127dB Max Spl, Gold 3 Pin XLR	\$933.00
<b>Sennheiser MKE 2-P-C</b>	speech and instruments (Sub-miniature)	20 - 20000 kHz Extremely robust. Flat freq response. XLR connector + 3-m cable	\$734
<b>Shure WB98H/C (Beta98)</b>	High volume wind / brass Cardioid Miniature condenser (Miniature Instrument)	20-20k Low profile miniature gooseneck. Flat response. High SPL handling. Integral quick release instrument clip	\$630
<b>Shure WBH53B (Beta53)</b>	Head worn vocals, spoken word. Omni-directional. Sub-miniature condenser (Headset).	20-20k Near invisible ultra thin design. Tailored for clarity. Small & light/ Cabled or wireless	\$1,345
<b>Shure WH30</b>	Head worn vocals, spoken word, aerobics Cardioid Miniature condenser (Headset)	40-20k Rugged comfortable headset. Tailored for clarity. Low cost, high quality voice pickup	\$495
<b>Shure WL51</b>	Performance vocals (Theatre) Cardioid Sub-miniature condenser (Lavalier)	20-20k Low visibility sub mini (5mm) capsule Tailored for clarity. Wide clip selection. Black or White	\$80
<b>Sony ECM44B</b>	Vocal Omni Electret (Lavalier)	40 to 15kHz Small capsule. Affordable high performance. AA Battery	\$436
<b>Sony ECM77B</b>	Vocal, Instruments Omni Electret (Lavalier)	40 to 20kHz Micro capsule. Optimum pickup for tie-clip use. AA Battery and phantom	\$843

### Other Types

<b>Oktava MK012 (Capacitor)</b>	Overheads, Strings, Stereo Miking & Film Sound Recording Cardioid Hypercardioid & Omni directional	Small Diaphragm True Condenser (Compact) 20hz to 20kHz	Matt silver, interchangeable capsules. Wide flat frequency response. Interchangeable 10 db pad	\$89
<b>Oktava MK012a (Capacitor)</b>	Overheads, Strings & Stereo Miking Cardioid Small Diaphragm True Condenser (Compact)	20-20kHz, Matt silver, interchangeable capsules. Wide flat frequency response. Interchangeable 10 db pad		\$599
<b>Peak PTM-7 (Set of 7) (Kit)</b>	Drum miking Various Various (Normal) Various	Solid metal construction. Each mic has different application. Includes two condensers + r/case		\$699
<b>Coles 4038 (Ribbon)</b>	Horns, Guitar amps Fig 8 Ribbon (7.25" x 3.25")	30 to 15kHz Made from heavy duty brass. Extremely low distortion. The Rolls Royce of ribbon mics		\$2,369
<b>Oktava ML52 (Ribbon)</b>	Strings & Brass Figure of Eight 2.5 Micron Aluminium Dual Element Ribbon (Normal)	20-20kHz. Matt black gothic appearance. Extremely low noise, unique sound. True figure of 8 polar pattern.		\$1,259



Sanken COS-11s



Sennheiser MKE 2-P-C



Shure WH30



Sony ECM44E



Sony ECM77B



Oktava MK012 (Capacitor)

Oktava ML52 (Ribbon)

Peak PTM-7 (Set of 7) (Kit)



## ENTECH 2002

### VISITORS TALK.....

by Mandy Jones

• **Ziggy Ziegler**, head of Lighting at the **Sydney Convention Centre**

Fantastic, it's been lots of fun. There's a few small new products, but mainly there is a lot more

information, and people with knowledge about the products, than at the last Entech.



• **John Deacon**, from **Starstruck**, a Newcastle production company run through the Department of Education

Awesome! Wouldn't it be lovely to have a bit of money?! But it gives me lots of ideas. It's an inspiration, a catalyst for the next show that we do. You can look and say whoa! I never thought of that. It's sort of like a gathering of all these creative minds. I'm amazed, I can't get over it.

• **John Kelly**, AV Manager for the **QLD Performing Arts Centre**

It's great. I've been to two very interesting audio/visual seminars. The first one was Gary Kaye, really switched on, excellent, looking at where AV technology was going in the future. That was great. Then today, I went to one on venue management tools. Brilliant stuff. I found out about some really affordable software.

You run into everyone you know, that's always good. You see people you haven't seen for years, see a bit of new gear and talk to people about things you don't understand. It's great.



console was a popular item on the ULA stand. The new Ethernet directed console features DMX Processor Units which each have four DMX universes. By adding more DMX Processor Units, a WholeHog III can control more than 8000 multi-parameter fixtures.

Hardware improvements include larger and brighter adjustable angle touch screens, Zip drive and rewritable CD-Rom drive. Improvements to the built-in fixture library include a consistent control interface for all fixtures regardless of manufacturer or type, and the ability to easily copy programming between different fixture types. Other features include an enhanced effects engine and a fully calibrated colour picker, allowing seamless colour-matching between fixtures, gels and dichroics.

From Avolite the new **Diamond 4** console launched at Plasa and the **Art 2000** dimmer racks were on show. The Diamond 4 includes all the popular features from its predecessor but is aimed at the highest level of lighting users and the largest of applications. The D4 has 6 streams of DMX built in and can take more using Ethernet and can run 1000 or more fixtures. The new design is also said to be intuitive and to alleviate operator fatigue, and the the D4 has a processing engine running at over 1Ghz to ensure that response times are fast.

The new High End **X-Spot** framing shutters module was also on view. The framing shutters can be added to the unit as required and are removable. The shutters are fully indexable and rotatable at low speed.

From Griven there was the new **Goboclip** fully weatherproofed outdoor gobo projector, **Kolorclip** compact 150 watt weatherproofed colour changer suitable for architectural applications, and the **Kolorjet** high powered

4000 watt Xenon outdoor fixture with electronic zoom, frost soft edge effect and strobe.

The new full colour packaging for all ULA's SoundiVision products were also on show.

• **Universal Lighting and Audio**  
1800 648 111  
[www.ula.com.au](http://www.ula.com.au)

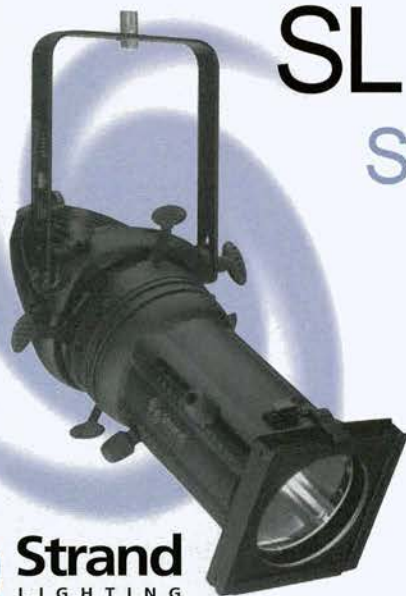
## LSC

Entech was the first opportunity for LSC's new Maxim console to be seen in Australia. Aimed at the theatre, school and rental markets, the Maxim is a fader-based console capable of single or twin preset operation. The range includes five models of varying size from 24 faders/512 DMX channels up to 120 faders/1024 DMX channels.

The optional PatPad module is designed for user-friendly control of intelligent fixtures and includes a touch and adjust screen, individual virtual selection buttons for up to 20 fixtures, and virtual wheels for adjusting fixture parameters and pan and tilt adjustments. LSC's Alan Graham said there was a great deal of interest in the Maxim range over the course of Entech and expected a number of sales to transpire as a result.

LSC's iSeries dimmers and patching were also popular to visitors, in particular the iPatch mounted patch panels and the iPak 12 channel digital wall mount dimmer racks. Also on show at the LSC stand were ADB consoles the Phoenix and the Vision. Suited to theatre and broadcast applications, a Vision console was recently chosen by ABC TV for the Melbourne Studio 31 control room.

• **LSC Lighting Systems** +61 3 9561 5255  
[www.lscighting.com.au](http://www.lscighting.com.au)



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## Show Technology



Show Technology made good use of their impressive Entech exhibit by showing off around 50 new lighting products. One of the products that had most visitors stopping for a closer look was the **Martin TrackPod Controller**. Aimed at the concert and theatre markets for use in large venues, the unit is used to control multiple automated followspots with a single operator. Using a laser calibration system the TrackPod can direct up to 128 lighting fixtures to fix on an exact spot.

Also from Martin was the much anticipated **Mac 2000 Performance**. The new model features an internal framing system making it better suited to theatrical applications than its predecessor.

Clay Paky's **Stage Profile 1200 SV** was of great interest to LD's and rental buyers due to its framing abilities. Described as a professional beam shaper with the versatility of a moving body projector, the Stage Profile 1200 SV uses four beam shaping blades operating in four focal planes to create quadrilaterals or triangles of any shape or size. The blade system can also rotate 90° in either direction. Optically, the fixture has a zoom range of 16° to 24°, and its features include an iris, mechanical dimmer with strobe and strobe effect, and a seven colour wheel.

New from Jem was the **Glaciator** heavy fog generator. The Glaciator rivals other low fog generators by not requiring C32 cylinders or three phase power. Requiring only 13 amps, the Glaciator runs off standard Jem Heavy Fog fluid, making it ideal for touring, theatre or club applications.



Among the new additions to the Geni scanner range are the **Mizar-12** and the **Shiva**. The Mizar-12 is a 1200HMI lamp mirrored fixture which features five rotating and six stationary gobos, eight dichroic colours plus open white, colour correction, rotating prism, wash, iris, focus, strobe and dimming.

The Shiva scanner comes in rotating or non-rotating image versions with a choice of three lamp sources. The rotating image version features nine dichroic colours plus open white, six rotating exchangeable images, strobe and linear dimming. The Shiva is also the first die-cast aluminium mirrored projector to be made in Asia.

The **grandMA** range of consoles from MA Lighting were given some serious road-testing by a seemingly constant stream of lighting professionals. Available in three different models - grandMA, grandMA light and grandMA ultra-light - the consoles are big on display with three colour touch screens and up to two external monitors on the largest version, the grandMA. The grandMA can take four streams of DMX and can run up to 8000 channels via Ethernet. For faster programming and recall, it features 20 motorised faders, an extra large track ball as well as a mouse and mini keyboard. All three consoles use MA's version 3.00 software.

- Show Technology  
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www.showtech.com.au

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## VISITOR talk

• **Peter Wilson**, install and hire sales/project manager at AV Sound It's very interesting, there's lot of things to look at, a few nice new things available. The best part is getting to meet people I have only dealt with on the phone.

**Giles Wragg**, sales manager for permanent installations at AV Sound

Very impressed with some of the larger products, with the clarity and colours of the image and Gobo projection. There's some really nice crisp clear images. And the new flame light effects are quite impressive. We recently installed some of them in the Arthouse hotel, they look really good in permanent installations.



• **Phil McNab**, 103.2, 2CBA FM  
There's one product we're possibly going to buy for the station, so we've come here to have a look at it.

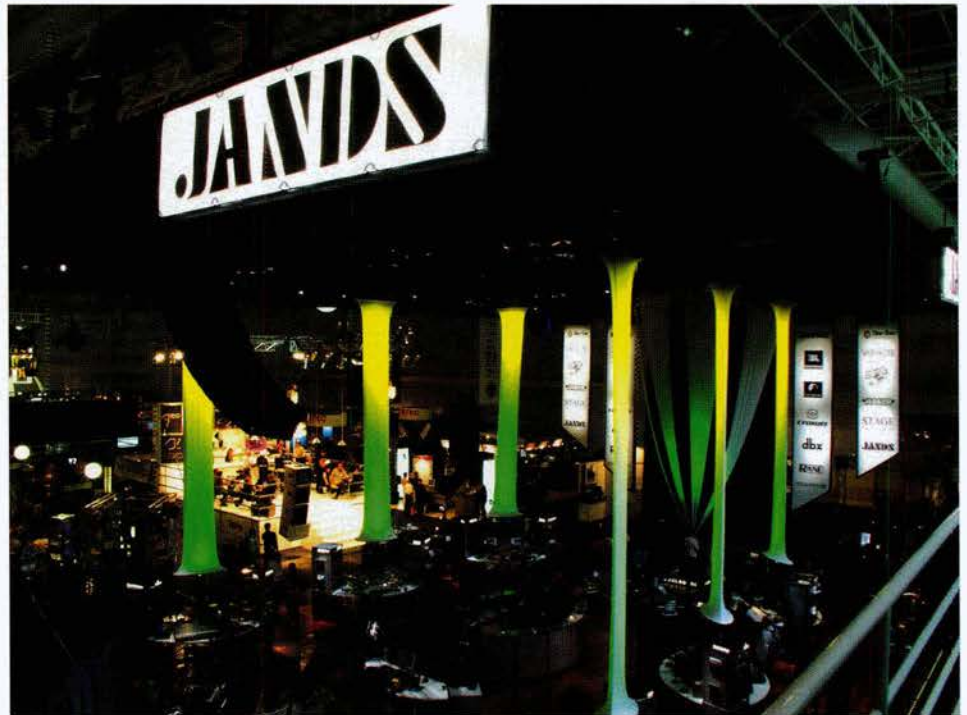
• **Eamon D'Arcy**, Senior production designer Opening Ceremony, Sydney 2000

The show is fantastic, it's great for the industry, it shows the breadth of the industry and how it is slowly developing, which is important. The talent here in terms of people and resources is quite inspiring. There's a few overseas people buzzing around which is nice - Space Technologies; there's an Irish group of consultants over there. That's very healthy for the industry.

• **Brothers Ian and Kevin Howard** from Canberra's office of **Staging Connections**, came to Entech for the full three days. They attended rigging and lighting seminars, & on the show floor, were keen to check out new moving lights & moving light control systems.



• **Bevan Radburn** made the trip from Orange to check out Entech on behalf of Audio/Visual company **Riff Raff**. Impressed by the trade show, Bevan said he was on the look-out for in-ear monitor systems as well as to bring himself up to date on new developments in intelligent lighting fixtures.



New products from Vari\*Lite always draw a crowd at Entech, so with the new **VL1000** (reviewed in this issue) on show, it was no surprise that Mr Vari\*lite Tom Littrell was a busy man over the three days of the show.

Tom described the new fixture as "Vari\*lite goes theatre", explaining the VL1000 is a workhorse theatre light with automated features.

Optically, the VL1000 has a continuously variable field angle from 19° to 36° for normal imaging, and a super zoom function allows for field angles up to 70°. The reflector is a precision glass reflector with dichroic cold mirror coating. Framing and cropping of beam and gobos can be achieved by a four blade system which is rotatable to 90°.

The VL1000 is capable of smooth continuous movement with a pan range of 540° and a tilt range of 270°, and most importantly for theatre applications, is quiet with cooling achieved via free convection cooling when hung, or by a low noise forced air cooling system when floor mounted.

Available in 1200W tungsten halogen or 575W arc lamp models, the VL1000 weighs 27kg and is described as "very affordable".

Also on display at the Jands stand was the new rebundled version of Cast Software's **WYSIWYG** application. The already user-friendly CAD program has undergone major upgrades to assist LDs in actualising their designs in a richer three dimensional environment. Cast Software's Ben Sandford explained the improvements on version 3.5 are significant, making the interfaces easier to use with more shortcuts.

Each of the WYSIWYG modules - Design, Report and Perform - have been improved upon. Attention to detail has improved on shaded

beams, full colour mixing, the inclusion of natural light options as well as bounce and colour reflection. A comprehensive costume library is included to assist LD's visualise the effect of light on colour and texture, and even the virtual people have had a make-over and have been given round heads to make them more realistic.

The plan and report modules have been rebundled into one easy to produce program, and improvements to all modules mean better, more photorealistic pictures of the designs. To demonstrate the programme's capabilities, Ben had WYSIWYG running standalone, as well as interfaced with an ETC Expression.

• **Jands Electronics**  
+61 2 9582 0909  
[www.jands.com.au](http://www.jands.com.au)

## Compact Lighting Systems

Compact Lighting Systems stand by their name. You wouldn't see any oversized, overwhelming consoles on this stand! CLS had their entire range of compact systems on show at the Network Entertainment Technology stand, including their new range of dimmers, but the product that had people talking was the tiny but powerful DMX16S controller.

At around the same size as the average walkman, the DMX16S is a fully programmable 16 channel controller capable of basic effects such as chases and flashes, crossfades, and can even drive a smoke machine. Able to store four scenes, the mini-controller is ideally suited to small theatre or band applications, or for controlling environmental or architectural lighting systems.

• **Network Entertainment Technology**  
+61 2 9905 5997 / +61 3 9795 8300  
[www.network-et.com](http://www.network-et.com)

## Coemar DeSisti

The new products drawing the most attention on the Coemar DeSisti stand were the Compulite Rave console and the ISpot 150 and 575.

According to Sales Executive Richie Mickan, Entech 2002 was extremely successful for CDA gaining around 25 solid new customers over the three days, and fielding lots of enquiries from many others.

Richie said one of the main comments from visitors was that they hadn't been aware that the CDA range also featured low-cost fixtures.

The Compulite Rave drew attention from visitors looking for consoles in the mid to high range. The 100 channel console can run 40 moving lights and 20 other DMX controlled devices. It features a hi-res LCD screen, three encoder wheels, 20 faders as well as effects keys.

The ISpot 150 is one of Coemar's new single arm moving yoke fixtures. Capable of 530° of pan and 284° of tilt, it is a compact and extremely bright unit. Features include multiple indexable and rotatable gobos, dichroic colours, and motorised adjustable focus.

ISpot 575 uses a 575 watt MSD/MSR2 lamp and is capable of 385° of pan and 260° of tilt. It features two gobos wheels of up to 12 rotatable gobos plus open, mechanical



dimming, motorised focus, step zoom with three angles (21°/25°/27° with iris diaphragm) and two colours wheels for up to 14 dichroic colours.

Also on show was CDA's growing range of architectural and exterior units, the popular CF7 range, as well as units and accessories for the film and TV market.

• **Coemar DeSisti Australia**  
+61 3 9467 8666  
[www.cdaust.com.au](http://www.cdaust.com.au)

## Evo by Enttec

One of the lighting products that had people talking at Entech was the long awaited unveiling of Enttec's powerful new intelligent light console, the Evo. Looking like a proud new father, Enttec's Nick Moreau (right) was keen to demonstrate the desk's capabilities.

Similar to the Hog, the Evo features an LCD touch screen, encoder wheels and a powerful effects engine. Up to four streams of DMX (2048 channels) using Ethernet, the Evo is well suited to both permanent venue and touring applications. 60 submasters (10 pages of 6) are accessible through high quality motorised faders making show recall a breeze, and an on-line web service allows for quick updates to the 300 plus fixture library.

An expansion wing is available featuring more faders and buttons and a back lit trackball for quick plotting.

The Evo will be in full production by the



time you read this.

Nick said he was swamped by interest from visitors and exhibitors alike and he had some significant discussion with companies about overseas distribution of the product line. Priced around \$6000.

• **Enttec Entertainment Technology**  
+61 3 9819 2433 [www.enttec.com](http://www.enttec.com)

## VISITOR talk

• The world of Entech was all very new to **Marti Shelton** who travelled from Brisbane to see the exhibits. Marti has only been in the industry for around



11 months since her company **Tarpchoker** and its product of the same name made the leap from the camping industry into entertainment (how many other companies can make that claim!). Marti mainly came to see rigging and lifting devices but was impressed by her first Entech experience, describing it as "very interesting".

• **Rebecca Allen and Anthony Pearson** are about to commence their first year of the Technical Production course at **NIDA**.



Rebecca, who hasn't attended an industry trade show before, revelled in the opportunity of having hands-on time with working equipment. "I love being able to play with everything," she said. And even though Anthony had been to previous Enttechs and to LDI, Rebecca revealed that he "practically ran between the stands to check out the equipment.". Of the new products on show, Anthony and Rebecca said they were most impressed by the new VL1000 and the Hog3.

• **Crown Casino Showroom Manager Gary Rappel** made a flying visit to Entech on the Monday before returning back to Melbourne that night. "We're so busy with shows in at the moment, that this was the only way I could do it". Gary used his



time to catch up with new lighting equipment while one of his staff checked out the audio stands, in particular radio communications and monitor consoles.

• **Heldi Pilli and Lucy Kelly** from **Haycom Staging** in Sydney were happy to casually check out the exhibits while the Haycom boys went off to do the seminars. Heldi and Lucy, who have both been in the industry for over five years, made the most of the opportunity to network. As for products, they were mainly interested in the AV stands, and were very impressed by the Plus projectors on show at the Amber Technologies stand.



## VISITOR talk

• **Philip Wright** from **Shipley's Audio Visual** in Christchurch, New Zealand, was a first timer at Entech. A veteran of 15 years in the industry, Philip said Entech was a valuable opportunity for him to have a good look at vision and sound



equipment. "In New Zealand we only see what we're shown, so this is a great chance to see what else is out there". Philip's main reason for crossing the Tasman was to attend Gary Kayye's session on display technology which he described as "excellent".

• Melbourne boys **Mark McDowell** of the **Mahon Theatre** and **Martin Karklins** of the **Alexander Theatre** were making the most of



the industry seminars attending those relating to venues and lighting. Both agreed Darling Harbour was a preferable venue and location to Homebush, and were impressed by the trade show in general. Mark used his time on the show floor to look at lighting consoles and by the 3rd day said he had spent a lot of time at the Bytcraft stand looking at the Strand desks. Martin explained he was checking out the stands to see what was new but would most likely wait until he was in Melbourne to talk price with companies.

## My First ENTECH

By **Graham Walne**

For many years I reviewed the annual trade show of the Association of British Theatre Technicians. Simultaneously I was writing a column for John Offord (of etnow.com) who created the first UK show for both technicians and management. John later helped to create the PLASA Show which now dominates the UK scene.

However, this year's Entech was my first.

I was, of course, aware of its reputation, and in the remoteness of WA where this column is written, theatre folk assume two classes, those who are going to Entech, and those who are not. The same might apply to other parts of Australasia but from here it requires a very conscious effort and expectations therefore are high... "anything worth seeing?" ... "not really... interesting digital widget on the Singing Kangaroo stand but otherwise..."

The accessibility of UK shows means that you're guaranteed to see everyone you know and celebrate with a Glass of Something. Older venues sometimes have a rakish quality which is convivial on these occasions, new ones tend to be more clinical and perhaps inhibit the imbibing but Sydney's building echoed the quiet professional air of both the exhibitors and the delegates. I gather the numbers were healthy this year and stand attendance apparently didn't drop too far during the seminars, even though these were usually full.

'Connections' had asked me to run six

seminars but living at the opposite end of the building from the halls (closer next year I gather) I don't feel

qualified to report on the products.

First impressions are that, as usual, lighting and sound attracted attention and made non-electrical stands work harder to seem interesting. One key difference from the UK at Entech is that it was possible to hold a conversation without shouting. I was always amused at how loudspeaker suppliers could seriously demonstrate their wares when alongside 20 others were doing just the same, although in the UK most of the sound came from the flashing light brigade.

This exposes the changing nature of such shows as the fields of rock and roll, disco, corporate and theatre come closer together... but the one which predominates is always the one with the most spending power.

Overall what emerged from my six seminars was a consensus that theatricality rarely changes even if the technology does and that the end result is improved by detailed planning and preparation.

In introducing the Venues seminar I proposed that we need to learn what works and what doesn't about the older theatres. This, I suggested, should also encompass a projection of the impact that modern technology can have on theatre design



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View of Hall 1 at ENTECH 2002. The show occupied two halls at the Convention and Exhibition Centre

because Victorians certainly were quick to implement inventions and these changed the theatrical landscape.

I gave some purely speculative examples, including the idea of seat back screens to provide simultaneous translations. Little did I know that these exist at the Metropolitan Opera in New York.

Andrew Nichol of Arup Acoustics then skilfully balanced reminders of the established parameters of good acoustic design (including the importance of walls and

ceilings for the vital early reflections) with an overview of the challenges facing today's designers of theatre buildings: the increased expectations of audiences in terms of sightlines, noise levels, quality and the multifaceted location of theatrical effects. The emerging theme was continued as the new Glyndebourne Opera House's circular auditorium was said to be a modern standard - but based on older formats.

Tony Youlden of NIDA provided a vital reminder of the needs of the audience but

## VISITOR talk



• **Newcastle City Church** sent **Ben Smith** to his first Entech to check out new lighting equipment for the Church. With around six months experience behind him, Ben was keen to check out LX desks to replace one stolen from the Church recently. The Church has six moving lights in their inventory so Ben was interested in desks suitable for both intelligent and conventional fixtures.

• **Andrew Austin** from Sydney's **Out Of This World Entertainment** has been in the fireworks and DJ end of the industry for the last four years & is looking to expand his business. Andrew came to his first Entech this year to compare DJ and lighting equipment that would be suitable for the niche wedding market.



• **Griffith Regional Theatre** sent technician **Paul Jacobsen** to Entech to look for a new digital mixer to replace their old Jands mixer. "We need a digital mixer in order to handle

our dance requirements so I've been looking at the Yamaha digital mixers." Paul said the best thing about Entech was being able to see equipment from the high end of the market which he doesn't get to see at his venue, and said he was most impressed with the flame lights from a hire-in point of view.

• **Ray Eberle** from East Coast NSW's **Fat Sound** attended the first Entech all those years ago and was very impressed with how the trade show has grown and



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## VISITOR talk

improved. He mainly came to Entech 2002 to check out live audio equipment to replace his Jands inventory, and said he was impressed with the Martin compact systems.

- **Steve Wickham** from the **Lyric at Star City** managed to get along to Entech for one day to "catch up with the crowd". While he didn't have time to attend any sessions, Steve said he was on the lookout for stage machinery equipment as well as lighting and sound.



- Theatre Consultant **Denis Irving** from **Entertech** mainly came to Entech for a general update on new technology and for networking reasons. Denis spent three days acquainting himself with new products to keep in mind for upcoming projects. He was pleased to finally see the German-made Liftket chain hoist in Australia after spending years trying to contact the company for distribution information, and was glad that Showtech Rigging will be handling distribution in Australia. With Denis' wealth of experience it was no surprise that he was at the Venue Design seminar, adding his experiences to the discussion.



- **Wati Nadkuitavuki** and her husband made the trip from Papua New Guinea to check out new equipment for their sound and lighting company **Tova Miri**. With well over ten years experience

in the industry and having been to a previous Entech, Wati was on the lookout for suitable replacements for their TOA gear. Wati was also checking out self-powered speakers which she said the company is "working up to" purchasing. Wati wins the prize for smartest Entech visitor for bringing a wheelie suitcase with her to carry her showbags around the trade show floor.

- **Channel 9 Melbourne's** resident LD **Rohan Thornton** could only spare one day away from tapings of Nine's game shows *Shafted* and *Who Wants to be a Millionaire* to visit Entech. Rohan said the lighting products he was most interested in taking a close look at were the VL1000, the new Hog 3 console and High End's Catalyst moving head video projector.



- **Kent Paisley** from **QUT (QLD)** was checking out AV options for the lecture theatres at his University. He said he would be checking out everything from control systems through to light-bulbs, and because every lecture theatre is different, "it would be quite a task". Kent also attended Infocomm's week-long vision and presentation course prior to Entech.

also the most eloquent statement of the seminar when he drew a dot on the board - a storyteller, around him Tony clustered other dots - the listeners. In one simple drawing the essence of theatre was visible, storytelling, and the drawing also resembled not only NIDA's new theatre but also the circular nature of Glyndebourne, the Globe and all that had gone before. We were all saying that the relationship of the actor to the audience was paramount.

The legendary Denis Irving then brought the presentations to a close with cartoons which quickly made the point that despite all this history we still have the potential to make cataclysmic mistakes. Denis's theme was that the preparation and planning process needed a theatre consultant who alone could provide independent experience.

'Lighting Designers Forum' followed. In opening this I proposed that LDs have one of the hardest jobs in theatre because unlike other creative team members they cannot demonstrate their ideas and first need to establish a common visual language. The use of CAD should help this when more accessible. Another problem for LDs is the schedule and successful LD's are those who marshal their time well and overcome inherited delays.

Gordon Richmond, a well-known theatre man, now with Vision Design Studio, concentrated on big spectacular architectural lighting - "I don't do toilets". Here the lighting is designed to provide character and dimension, just like in theatre, except his set is the Sydney skyline. Gordon outlined a number of projects but one experience changed his outlook, this was a car launch on which the high budget enabled lots of pure colour to be enjoyed and this led to his philosophy "too much light is never enough". The most stunning display is his recent work on the 350m Macao tower \*, controlled from his motel room via a microwave transponder 1.5km away from the site. Throughout Gordon reminded his audience that the elements and equipment are often the same as in theatre - just bigger.

Alex Saad previewed some of his later seminar on moving lights but very openly encouraged his audience to record mental light pictures from any source and also to use whatever equipment did the job, irrespective of its heritage.

The best attended seminar was for Moving Lights and this necessitated a move to a larger room. Whilst this seemed like a good idea the

poor acoustics hampered the presentation and an unusually faulty sound system and slide projector didn't help the seminar get off to a good start. I thought theatre people (like me) would find this fascinating because we think we can rarely afford moving lights although this view was challenged by the opening speaker. The 'planning and preparation' theme was well served by Trudy Dalgleish, kindly standing in at the last minute. Trudy explained that you can't just walk in and play, it's essential to take time to program into the desk a range of locations to which the lights could be directed and then add similar set-ups for gobos, beam sizes and colour washes - she allows 3 hours for this. Consequently, she explained, this means that the lighting session flows more fluidly and can respond to the director's changes more easily. Trudy also clarified the ratio between conventional and moving lights in rigs for both drama and musicals.\*

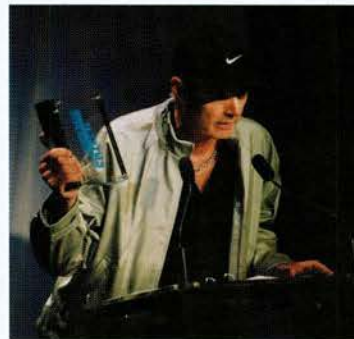
Alex Saad, also kindly standing in at the last minute, echoed much of Trudy's advice to plan ahead, albeit in his rock and roll / corporate world "on the back of napkins, boarding passes or sick bags". Alex stressed the need to think it all through before getting to the venue, taking into account the size of

the crew and what the rental house has in stock.

It's clear from these two hands-on designers that the freedom to create and excite has to be earned and comes only after taking great care. Whilst it had been my hope that more people would get their hands on the equipment (kindly provided by Jands and Chameleon), a large number grouped around Trudy and Alex enthusiastically asked questions.

Clearly this is a hot topic and there is scope for further seminars on different levels of structured access.

'More with Less' is a good description of this seminar I was the only presenter! In working with small rigs I repeated that planning again was the key, and a clue is to try and imagine the stage when one globe blows, is there a hole? If not what the — is the lamp there for? In small rigs and venues different expectations apply than with larger ones and often a minimalist style can work if honestly and consistently presented. Two quotes from other seminars would have been useful too... from Trudy Dalgleish... "even with one moving light it's amazing how many looks this will give you and how many conventional lights you can do without". Another from Tony Youlden.. "I once lit a



Gordon Richmond receiving the ENTTECH 2002 - Best Lighting Designer (Architectural or Installation) Award

show with 24 lanterns, years later I repeated it with 150, I don't think it was any better!"

In the 'Colour and Projection' session I outlined some European history of scenic projection when designers often risked their all on emerging technology. However, the real star of this seminar was Electric Canvas's Peter Milne\* who held the audience gripped with one stunning visual after another. Peter clarified that projectors today are part of the LD's palette of colour and texture and not used simply to replace scenery. Furthermore these techniques are found not just in theatre but also in a wide range of both indoor and outdoor events, the latter where ambient light levels can not be controlled. Peter provided a very accessible explanation of how projectors work covering light sources, dimming, slide change and placement and in this adding the use of Vectorworks to design predestined slides. He explained the use of the two digital film scrollers on the front of the Pigi machines and how a wide variety of effects was possible by adjusting the speed, direction and orientation of the two films. Peter also explained what could be achieved with one film masking part of the other, sometimes to be filled in from another digitally linked machine and this clearly has added a dynamic to this ancient art.

The final of my six seminars was entitled 'Working with LX People' and I opened with an overview of what people could bring to the job (humour, health, perspective) and what training could provide (professionalism, skill and knowledge).

Tony Youlden from NIDA continued the training theme saying that for LDs whilst the formulas in the books were a start, lighting wasn't about squares but providing a suitable environment and the only way to learn this was to do it. Tony advised to focus quickly to get to the plotting then touch up later - "every spotlight is a brush stroke not a

masterpiece!" Tony expressed a wish for a greater sense of history so that time isn't wasted re-inventing the wheel and also for a perspective about the use of the latest gadget - "if they're on every show it gets boring". Commenting on the unsocial hours of the industry he identified the difficulty of seeing others' work, a sense of isolation which was also echoed in his comment that crews are not given the script so they don't know the show.

Lighting he said is a mixture of an art and a craft, most of it personal. "It's rewarding and can be addictive, but try it - start in the backwoods where few can see your mistakes!". Tony's ideal LD is one that is "flexible, tolerant, quick to learn, won't cut corners...and maybe has common sense and a sense of humour".

The final speaker was John Grimshaw editor, of 'Connections', who brought another dimension to the debate by asking about the employability of people in relationship to their potential for training. John explained the Create Australia national competency standards which would eventually involve the wider theatre community and clarified the 'Connection's' courses which at entry-level were "shooting a bit under that".

I can't end this review without expressing both my gratitude and that of 'Connections' to all the presenters who provided their services free of charge.

Finally, a new experience for me was the awards dinner - I normally avoid these but since I was asked to be one of the award presenters I could hardly refuse and I'm glad I didn't. Good presentation, good music, good food, good company and above all, an evening that ran to time. When was the last time you attended one that did that! Elsewhere Entech 2002 had it's glitches but I'm certain that both Julius and John (and their staff) are genuine when they say they want to make

improvements, your comments will, of course, help in this.

The point about such shows is that they have to create an inevitability about the need to attend and I think Entech does that. See you in 2004.

• See Connections Feb 2002 for articles on The Macao Tower, Trudy Dalglish's lighting of 'Sweeney Todd' and the projection work of the Electric Canvas.

## VISITOR talk



• John Bryce has only been with Newcastle's Custom Audio for 10 months after making the career move from being a motor mechanic. John said his main reason for coming to Entech was as a learning experience. Working

in audio installations and sales at Custom Audio, John said Entech was a fantastic opportunity for him to get to know the industry as well as check out the wide range of audio equipment for various applications.

• Tech Operations Manager of Her Majesty's Theatre in Ballarat, Stuart McKellar had a shopping list of equipment upgrades for his 2003 budget applications. In particular, Stuart was checking out speaker and front of house systems, winches and stage machinery, and was keen to find barcode software for the tracking of assets. Stuart said his lighting stock is in need of upgrade and joked "we need to bring it out of the 60s and into the 80s!". Stuart also managed to squeeze in some seminars including Venue Design, Rigging and Moving lights.

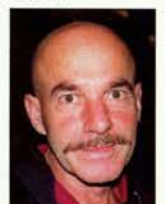
• Kelly Mouna came here to first Entech in her capacity as a writer for Sydney street press 3D World. Kelly handles advertising and sales for 3D World's technical equipment pages so she came to the trade show to check out new DJ equipment, and to network with her audio and lighting supplier clients. Kelly is also interested in DJing and was eager to check out Pro-scratch DJ mixers at American DJ.



• Melbourne based LD David Murray loves catching up with friends at Entech and was keen to check out some of the newer lighting products he hadn't had a chance to play with yet.

David was impressed with the X-Spots with framing which he said are ideal for an upcoming Playbox design of his. David was also checking out discharge profiles and architectural fixtures for an architectural project. Other units he had hands-on time with were the Mac 2000, Futurelight, Selecon fixtures and Robert Juliat followspots.

• Describing himself as a "lapsed lighting designer" Michael Barry travelled from Queensland to be a part of Entech 2002. Michael said he was impressed by the show in general, and thought the retrospective exhibition was a fantastic idea and well put together. Of the new lighting products on show, Michael said he was most impressed by the Compact Lighting Systems mini programmable controller and some of the new followspots on show. He also enjoyed the networking opportunities Entech provided to catch up with colleagues.



(continues pg 58)



Hall 2 - looking through the mega Jands stand

# INSTALLATION

This month's market report on Installation Projectors asked the distributors of all of the big projectors to provide information on their products that weigh more than 15kg.

Each distributor was limited to detailing four models in each category, though we have allowed them to tell us the total number of models they have in their range. As you can see from the contact information panel, only two vendors had devices beyond the ones listed here.

This 'snapshot' of the market is intended as a guide to the options available, and to give you the contacts to research your intended purchases or hires further.



Barco iQ G300



Barco Executive SLMG5



Sony VPL-FE110M



Christie Digital Vista X3



Christie Digital Vivid Blue

## Installation Projectors (under 5000 ANSI Lumens)

<b>Barco BarcoGraphics 6500</b> (4k Lumens / 400:1 Cont)	1280x1024 1.8" 3-chip LCD	4x zoom & 5x fixed lenses	17.7 kg without lens	Easy stacking for higher light output	Optical light shutter	SDI & Firewire	\$33,176
<b>Barco BarcoReality 6500</b> (4.5k Lumens / 350:1 Cont)	2000x1280 1.8" 3-chip LCD	4x zoom & 5x fixed lenses	17.7 kg without lens	Motorised lens shift	Micro lens array	Controllable over network	\$44,847
<b>Barco iQ G300</b> (3.5k Lumens / 400:1 Cont)	1280x1024 1.3" 3-chip LCD	3x zoom & 2x fixed lenses	17.5 kg without lens	Modular design with cable basket	Dual lamp system	Picture in picture	\$35,000
<b>Christie Digital Vista S3 38-DMD014-01</b> (3k Lumens / 300:1 Cont)	1280x1024 0.9" 3-chip DLP	3x zoom & 3x fixed lenses	39.9Kg				\$93,000
<b>Christie Digital Vista X3 38-DMD021-01</b> (3k Lumens / 300:1 Cont)	1080x768 0.9" 3-chip DLP	3x zoom & 3x fixed lenses	39.9Kg				\$67,000
<b>Digital Projection HIGHLite 5100gv</b> (4.5k Lumens / 250:1 Cont)	1024x768 0.9" 3-chip DLP	3x zoom & 1x fixed lenses	43kg (no lens)	Floor mount, Ceiling mount	Set and forget	Motorised lens, SDI (opt)	\$99,000
<b>Digital Projection HIGHLite 6000sx</b> (4.9k Lumens / 250:1 Cont)	1280x1024 0.9" 3-chip DLP	3x zoom & 1x fixed lenses	43kg (no lens)	Floor mount, Ceiling mount	Set and forget	Motorised lens, SDI & HD (opt)	\$129,100
<b>Digital Projection HIGHLite 4100gv</b> (3.5k Lumens / 250:1 Cont)	1024x768 0.9" 3-chip DLP	3x zoom & 1x fixed lenses	43kg (no lens)	Floor mount, Ceiling mount	Set and forget	Motorised lens, SDI (opt)	\$72,000
<b>JVC Professional Home Theatre HDTV DLA-G150HTE</b> (1k Lumens / 600:1 Cont)	1365x1024 0.9" 3-chip D-ILA	1x lens	15.4kg (w/lens)	Low noise design. 2-3:1 zoom w/no optical distortion.	high def images with true SXGA.		\$30,999
<b>JVC Professional Large Venue HDTV DLA-M5000SC</b> (5k Lumens / 1000:1 Cont)	1365x1024 0.9" 3-chip D-ILA	1x lens	71kg (w/o lens)	Metal cabinet - stackable.	wide range of lens options.	high def images with true SXGA.	\$146,245
<b>JVC Professional Super Contrast HDTV DLA-M2000SCE</b> (2k Lumens/600:1 Cont)	1365x1024 0.9" 3-chip D-ILA	2x zoom & 2x fixed lenses	15.6kg (w/o lens)	Low noise design.	range of lens options.	high def images with true SXGA.	\$41,657
<b>Panasonic PT-L6500EL</b> (3.6k Lumens / 600:1 Cont)	1024x768 0.9" 3-chip LCD	3x zoom & 1x fixed lenses	15kg /12.6Kg)	Noise cancellation system 36db.	Bright Optic Dual Lamp System.	Lens shift, keystone correction.	\$19,500
<b>Panasonic PT-L6600EL</b> (3.6k Lumens / 400:1 Cont)	1366 X1024 0.9" 3-chip LCD	3x zoom & 1x fixed lenses	15kg /12.6Kg)	Noise cancellation system 36d.	Bright Optic Dual Lamp System.	Lens shift, keystone correction.	\$29,500
<b>Sony VPL-FE110M</b> (4k Lumens / 700:1 Cont)	1280 x 1024 1.8" 3-chip LCD	4x zoom & 4x fixed lenses	34.5Kg (no lens)	Compact, cast chassis, rig points.	powered focus, zoom & shift.	Networking, quad lamp, stackable.	\$49,500

## Installation Projectors (over 5000 ANSI Lumens)

<b>Barco ELM G10</b> (10k Lumens / 450:1 Cont)	1280x1024 1.3" 3-chip DLP	2x zoom & 8x fixed lenses	135 Kg no lens	Double and triple stacked	Linked constant light output	13 bit signal processing	\$125,455
<b>Barco ELM R12</b> (12k Lumens / 500:1 Cont)	1600x1200 1.3" 3-chip DLP	2x zoom & 8x fixed lenses	135 Kg no lens	Unique interlocking frame	Sealed optics, smoke and dust proof	Built in light shutter	\$171,985
<b>Barco Executive SLMG5</b> (5k Lumens / 500:1 Cont)	1024x768 1.3" 3-chip DLP	4x zoom & 2x fixed lenses	45 Kg (no lens)	Modular for easy parts swapout.	Sealed optics, smoke and dust proof.	Linked constant light output.	\$93,808
<b>Barco Performer SLMG5</b> (5k Lumens / 500:1 Cont)	1600x1200 1.3" 3-chip DLP	4x zoom & 2x fixed lenses	45Kg (no lens)	Direct stacking and hanging.	Sealed optics, smoke and dust proof.	Linked constant light output.	\$93,874
<b>Christie Digital RoadRunner L8 38-RS1002-01</b> (7.7k Lumens / 800:1 Cont)	1080x768 1.8" 3-chip LCD	6x zoom & 3x fixed lenses	35.5Kg	Motorized zoom, focus and lens shift	4 lamp system (quad or dual mode).		\$64,000
<b>Christie Digital Vista S5 38-DMD022-01</b> (5k Lumens / 250:1 Cont)	1280x1024 0.9" 3-chip DLP	3x zoom & 3x fixed lenses	39.9Kg				\$115,000
<b>Christie Digital Vista X5 38-DMD022-01</b> (5k Lumens / 250:1 Cont)	1080x768 0.9" 3-chip DLP	3x zoom & 3x fixed lenses	39.9Kg				\$90,000
<b>Christie Digital Vivid Blue 38-VIV301-01</b> (5.8k Lumens / 700:1 Cont)	1280x1024 1.8" 3-chip LCD	6x zoom & 3x fixed lenses	20.5kg	Motorized zoom, focus and lens shift	4 lamp system (quad or dual mode)		\$59,000
<b>Digital Projection Lightning 10sx</b> (10k Lumens / 250:1 Cont)	1280x1024 0.9" 3-chip DLP	4x zoom & 1x fixed lenses	95kg (no lens)	Floor, Ceiling, Rigging, Stacking	Fully serviceable	Motorised lens, Faroudja AVD	\$220,000
<b>Digital Projection Lightning 15sx</b> (12k Lumens / 250:1 Cont)	1280x1024 1.3" 3-chip DLP	4x zoom & 1x fixed lenses	95kg (no lens)	Floor, Ceiling, Rigging, Stacking.	Fully serviceable.	Motorised lens, Faroudja AVD.	\$240,000
<b>Digital Projection Lightning 22sx</b> (11k Lumens / 250:1 Cont)	1280x1024 0.9" 3-chip DLP	4x zoom & 1x fixed lenses	95kg (no lens)	Floor, Ceiling, Rigging, Stacking.	Fully serviceable.	Motorised lens, Faroudja AVD.	\$240,000
<b>Digital Projection Lightning 25sx</b> (16k Lumens / 250:1 Cont)	1280x1024 1.3" 3-chip DLP	4x zoom & 1x fixed lenses	95kg (no lens)	Floor, Ceiling, Rigging, Stacking.	Fully serviceable.	Motorised lens, Faroudja AVD.	\$270,000
<b>JVC Professional Ultra High Res DLA-QX1G</b> (7k Lumens/1000:1 Cont)	2048x1536 1.3" 3-chip D-ILA	1x zoom & 1x fixed lenses	80kg (no lens)	Metal chassis, stackable.	sealed optics exclude dust.	only true QXGA projector for HDTV.	\$487,865

# PROJECTORS

<b>NEC SX10000</b>	(8k Lumens / Cont)	1280x1024 0.9" 3-chip DLP	3x zoom & 1x fixed lenses	43.0kg (without lens)
Stackable up to 3 projectors. Indexed zoom & focus/lens shift. DVI-D input, PC card viewer. \$195,800				
<b>NEC SX6000</b>	(5k Lumens / Cont)	1280x1024 0.9" 3-chip DLP	3x zoom & 1x fixed lenses	43.0kg (without lens)
Stackable up to 3 projectors. Indexed zoom & focus/lens shift. DVI-D input, PC card viewer. \$96,137				
<b>NEC XT5100</b>	(5k Lumens / Cont)	1024x768 0.9" 3-chip DLP	3x zoom & 1x fixed lenses	84.0kg (without lens)
Stackable up to 3 projectors. Indexed zoom & focus/lens shift. DVI-D input, PC card viewer. \$71,575				
<b>Panasonic PT-D9510</b>	(10k Lumens / 1000:1 Cont)	1024x768 0.9 3-chip DLP	3x zoom & 1x fixed lenses	100KG No Lens
Low noise design Ultra High contrast of 1000:2 Multi-screen edge blending \$219,000				
<b>Panasonic PT-D9610</b>	(12k Lumens / 1000:1 Cont)	1280x1024 1.1" 3-chip DLP	3x zoom & 1x fixed lenses	100KG No Lens
Low noise design Ultra High contrast of 1000:1 Multi-screen edge blending \$275,000				
<b>Sanyo Multivision PLCXF30</b>	(5.2k Lumens / 700:1 Cont)	1024x768 1.8" 3-chip LCD	6x zoom & 3x fixed lenses	20.5kg (no lens)
Lens shift allows stacking Two lamps for extended life Intelligent digital sharpness \$35,000				
<b>Sanyo Multivision PLCEF30</b>	(5.8k Lumens / 700:1 Cont)	1280x1024 1.8" 3-chip LCD	6x zoom & 3x fixed lenses	20.5kg (no lens)
Lens shift allows stacking Two lamps for extended life Intelligent digital sharpness \$45,000				
<b>Sanyo Multivision PLCXF40</b>	(7.7k Lumens / 700:1 Cont)	1024x768 1.8" 3-chip LCD	6x zoom & 3x fixed lenses	35.5kg (no lens)
H&V Lens shift allows multistacking. Four lamps for extended life. Optional Farouja input card. \$45,000				
<b>Sanyo Multivision PLCUF10</b>	(7.7k Lumens / 700:1 Cont)	1280x1024 1.8" 3-chip LCD	6x zoom & 3x fixed lenses	35.5kg (no lens)
H&V Lens shift allows multistacking Four lamps for extended life UXGA native resolution. \$90,000				
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JVC Professional	Hagemeyer	+61 2 9370 8888	www.jvc-australia.com	9	1		
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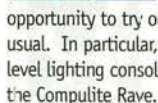


• **Hillsong Church's** Media Manager **Mark Zschech** came to Entech to double-check nothing had been forgotten in the specifications for the new multi-million dollar venue currently being built. With most of the \$3 million worth of broadcast and TV equipment locked in, Mark spent a couple of days at Entech chasing up loose ends and looking into further video and AV requirements.

• **Peter Tien** from Taiwanese lighting fixture company **Kupo** came out to Entech to introduce new Kupo products to his suppliers and to talk to potential new customers. He was very impressed with his first Entech and said it compared favourably with international trade shows such as LDI, Plasa and Palz.



• **Resolution X's** **Tim Hall** spent all of the first day of Entech just catching up with industry friends and contacts, and got stuck into some serious product trialing on days two and three. While he said there were "no surprises" of the new products on show, he found the opportunity to try out and compare products valuable as usual. In particular, Tim was on the look out for new mid-level lighting consoles and was taken by the MA range and the Compulite Rave.



• **John Sankowsky** and **Peter O'Brien** from Bundaberg hire company **Radioactive Entertainment** enjoyed their first time at Entech and their first visit to Sydney. They attended several seminars including the introduction to Line Arrays session which they found to be invaluable. Describing their purpose for coming to Entech as "to spend the boss's money",

John and Peter scoured the floor for everything from moving lights such as Clay Paky and the Mac 2000, to lighting consoles and front of house



effects racks. At last sighting they were in search of long and short throw lenses for video projectors.

• **Bruce Sheldrick** from **Digital CD Mastering** had only one day to check out Entech, and said he thought it was "very good". With around 30 years experience in the recording industry Bruce was predominantly interested in new studio gear on offer, in particular new mixers.



• **Victorian Art Centre's** head of technical

production **Jamie Henson**

declared Entech 2002 as "the best yet". Jamie was impressed by the size of the show and saw the attendance of people such as Singapore-based Leon Dark as an international stamp of approval. Audio-wise Jamie was looking for radio frequency talk-back units for his venues, and amongst the lighting stands was checking out Selecon and Strand stock. Jamie commented that lighting manufacturers still have a long way to go in addressing 'green' issues in making better and more efficient low voltage units.



• **Renata Hatzl** from Melbourne's **Pro Light and Sound**

spent all three days having an intensive look around the trade show. Renata explained that she was looking for innovations in DJ and club style lighting, in particular looking for effects units that were "new and different". Renata was also looking for home recording and music production software suited to the DJ market.



• **Australian Crewing's** **Brett Ferguson** attended Entech as a

visitor and a worker, assisting with the set-up of the Jands stand during load in. Brett said looking around the trade show he was amazed at the amount of money spent by exhibitors competing for the same piece of the market. While he was there he checked out new rigging equipment, Allen & Heath mixers and Mackie monitors.



## STOLEN FROM BIG DAY OUT

The following equipment was stolen from a 3RU rack on the 3rd of February from the backstage area:

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## People

In a function with family and friends on Saturday 16 February, ULA's Glenn Rostron announced his engagement to Melanie Adams. All the ULA staff want to wish Glenn all the best!

## Births

Ashleigh Laura Kate Selwood. Born 15th December 2002 @ 6.48pm. 8lb 10oz. Sister to Tamar Lucy Grace Selwood and Daughter to Wes & Narelle Selwood of Genesis Event Management.

## Showcorp Move

Sydney's **Showcorp Group** have moved into their new purpose built office/warehouse in Lane Cove. Showcorp Production Services provides technical facilities including audio, lighting, projection and stage equipment. The Great Outdoor Lighting Company offers powerful colour changing searchlights and washlights. Showcorp Video Solutions provides a comprehensive range of video shoot, edit and multimedia services.

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## MOTORISED SCOOTERS EVERYWHERE!

EVI Audio Australia, and Coemar DeSSisti Australia both ran competitions at ENTECH with a motorized scooter as the prize.

The EVI scooter was actually a MIDAS version, won by:

Nigel Line - Brisbane Sound - QLD

Dwane Hedges - The PA People - NSW

and Scott Goodby - Audio Source - WA.

CDA gave away three "CDA Motorised Scooters". One Winner was drawn at Entech 2002 each day at 5.00 PM by a representative from Connections Magazine and ETNOW.com. Congratulations to the following people:

Peter Mathison - from Australian Army Band Kapooka

Nicholas Vogt - from BLM Production Services.

Rob Coia - from Channel Seven

CDA would like to thank Julius and Daniel



Peter Mathison receiving his Cemar Desisti scooter at ENTECH

Grafton from Connections Magazine and John Offord from ETNOW.com for their cooperation in drawing the winners.

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## Who gives a flying friand?

It's music, Jim, but not as we know it

I'm pretty ambivalent about airline food. If they want to serve it up to me, then I'll probably eat it out of sheer boredom if nothing else. But after the flight to and from Sydney for the Entech 2002 show, I think it's pretty safe to say that the flying rat airline has long since given up all pretence of giving you anything worth eating.

This flight we were given a cardboard box containing an empty cup, an orange juice, and a friand. What, you might enquire, is a friand?

Although I see the word has just made it into the latest Australian dictionary update, I had never heard of it. So for those who have never heard of it either, I can now let you know that it is a freezing cold oval shaped solid lump of lard and industrial strength sugar, with a blob of raspberry-like jam on top. Once eaten, it weighs exceeding heavy on the stomach, lodging itself there for the rest of the day. A quick peruse of the ingredients: sugar, almond flour, syrup, butter, lemon zest (ie lemon flavoured sugar) revealed nothing that might be considered remotely nutritious but were a definite health hazard for the planeload of aging businessfolk like myself.

To digress for a moment, airlines have long had a knack of not calling a spade a spade. On a flight last year we were offered a 'delicious meat pocket'. I'd never heard of a meat pocket - I wouldn't have thought that cows had anything much to put in them - keys, change, cow-phone? It turned out to be a small meat pie. Being made by Herbert Adams was a bit of a giveaway.

Knives and forks having been declared a security risk, and having nothing to use them on (by jingo, what a cost-saving coincidence) we now get a little plastic envelope called a 'stirrer' pack. As I tore it open out of curiosity I half expected it to say "Hey - what's your problem? What the \*\*\*\* do you think you're lookin' at pal? Do you wanna go mate, eh, eh?" But no, it just contained a napkin and a magnum sized lolly stick/ tongue depressor.

Our arrival in Sydney prompted the skies to open with a vengeance, and stay that way until we left five days later. It bucketed down so heavily and for so long that I was surprised not to see on the Entech seminar list "Late inclusion - Ark Building 101: Does the sound system really need 2 of everything?; presented by Noah & Sons (Ham, Shem, Japheth)."

And try as I may, I really can't blame the Exhibition Centre for the rain, although I would have liked to. But I can blame them for the woeful performance at the food concession stand. I mean, the socially acceptable drug of choice for this industry is caffeine (let's not get into the socially un-acceptable ones right now), usually delivered in the form of a cup of coffee. However, by some bureaucratic stuffup, the food concession, something that would normally be an absolute goldmine, must have been struggling to turn a profit.

The only person who was authorised to take the money was the person who was making the coffees. And it looked like it was the first time he'd ever seen a coffee machine, let alone used one. If he were my barista I'd be calling for a mistrial! To wait 30min for an early

morning coffee jolt is risking a riot at a show like Entech.

But the queue at the food stand was actually the cheapest place to eat in all of Sydney. People in the queue who had plates of food were eating it as they waited forever to pay. Then, finding that they had nothing left on their plates to actually keep waiting to pay for, they just quietly drifted off into the crowd!

I say next show dump the caterers and let Tony 'TAG' Russo look after it. He was offering delicious free coffee and waffles in exchange for Entech Awards votes, and I'm not ashamed to say I took full advantage of it. Hey, I'm only human - and those waffles were 'waffer theen'\*

And so to the Jands Entech Awards, hosted or should I say hijacked by the charming Donte Done, with special guest artist Doc Neeson from the Angels, doing his first show after a nasty car accident post Olympics. I thought Doc was great. The first two songs were a bit iffy, but then he found his feet and like most of the audience I found it hard not to sing along with. "Am I Ever Gonna See Your Face Again?" A lot of fun, but where was his voice? Buried in the mix, it was very hard to hear.

I know it's bad form to criticise, because as an audience member you have no idea of what problems there might be. But as an audience member I don't care. All I know is that if I had been mixing an Angels gig and had lost Doc's voice so thoroughly, I would have expected to be yanked off the desk, chucked in a road case and pushed down some stairs!

But back to the awards. From our eagle's lair at the back of the theatre, with the follow spot doubling as our food warmer, it was obvious that a lot of the audience were a trifle miffed with Donte Done's off-the-cuff, unrehearsed DJ awards to his suppliers. It would have made a lot more sense if any of them had bothered sticking around to receive them. But it was obviously just as much a surprise to them as it was to the rest of the audience, because they all seemed to have gone home for an early night.

Look, I wasn't that bothered by it - that's the appeal of 'live' events. I like a bit of a shit-stir as much as the next person, and I try not to be a Luddite. I even like dance club music - I have a daughter, so what hope do I have of avoiding it? However, I suspect most of us in the audio side of the entertainment industry are there because we enjoy good sound, and enjoy selling products to create good sound to sell to others who enjoy good sound (sorry about the grammar).

This is not what the DJ market is all about. Driving the living shit out of a cheap 18 and a piezo in a carpeted box with a 50 watt amp is what the DJ business is all about. Good sound it ain't.

I like it loud, but I like it loud and good, and to me, that's the difference between pro sound and DJs.

As I watched Donte Done ramble on about DJs, I was struck by a sudden thought. Could it be possible that he and Ken Done are twins, separated at birth? Think about it; (a) they both live in Sydney, and (b) one hypes squiggles masquerading as art, the other hypes DJs masquerading as musicians.

"Waiter - saucer of milk over here please!"

\*Quote from "Monty Python; The Meaning of Life"



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## Trade Show Calendar

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PLASA - Shanghai Apr 16 - 18 2002 Shanghai www.plasa.org
NCSA - Expo "Reach the Summit" Apr 25 - 27 2002 Colorado Convention Centre, Denver www.nasca.org
Infocomm - China May 8 - 10 2002
AES - 112th May 11 - 14 2002 +1 212 661 8528
CEDIA Australia May 15 - 19 2002 www.cedia.com
Lightfair - International Jun 3 - 5 2002 Moscone Centre, San Francisco www.lightfair.com
ABTT Jun 19 - 20 2002 United Kingdom +44 20 7403 3778
PALA - Pro Audio & Light Asia/Total Events Asia Jul 10 - 12 2002 Hong Kong +65 227 0688
NAMM - International Music Market July 19-21 2002 Nashville TN www.namm.org
PLASA Sep 8 - 11 2002 Earls Court, London www.plasa.org.uk
IBC Sep 13 - 17 2002 Netherlands +44 20 7611 7500
Infocomm Europe/Photokina Sep 25 - 30 2002 +49 221 821 2958
CEDIA Expo 2002 Sep 25 - 29 2002 Minneapolis, MN
LIW Oct 8 - 10 2002 United Kingdom +44 20 8232 1600
LDI Oct 18 - 20 2002 Las Vegas Conventions Centre www.ldishow.com
Music China Oct 16 - 19 2002 Shanghai www.messefrankfurt.com
SMPTE - 144th Technical Conference & Exhibition Oct 23 - 26 2002 Pasadena Convention Centre
Emexpo - Elec Media & Equip Expo & Conference Oct 24 - 25 2002 Stadium Exhib Centre, Seattle www.emexpo.org
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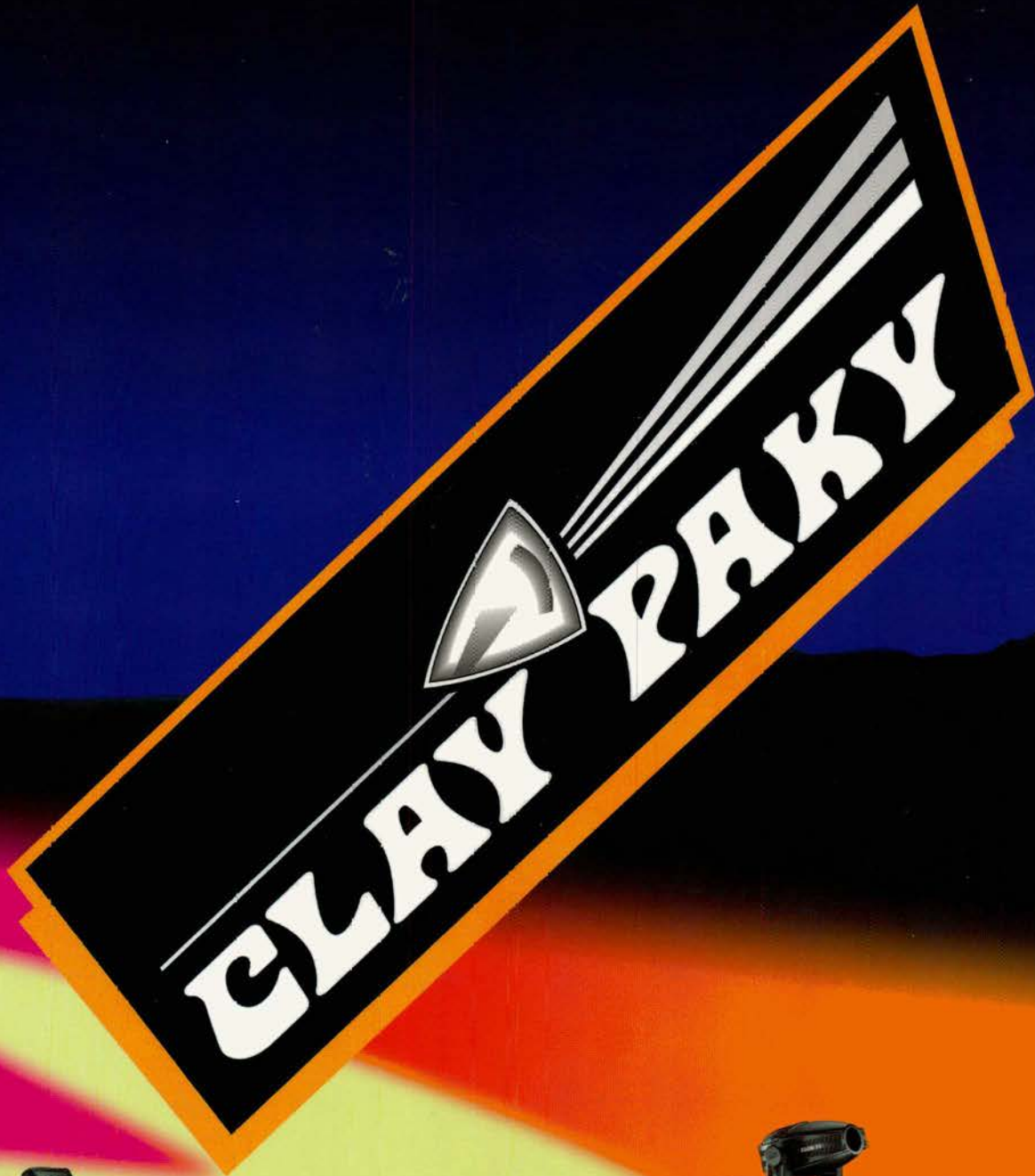
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