

PROFESSIONAL AUDIO MAGAZINE

# Connections

PROFESSIONAL AUDIO & VISUAL TECHNOLOGY

AUGUST 2001 A\$4.90 / NZ \$6.50

## Mixing Consoles: Huge market report!

- Tascam & Yamaha face off with new 16 track recorders
- Giotto 250 examined • Selecon designer talks optics

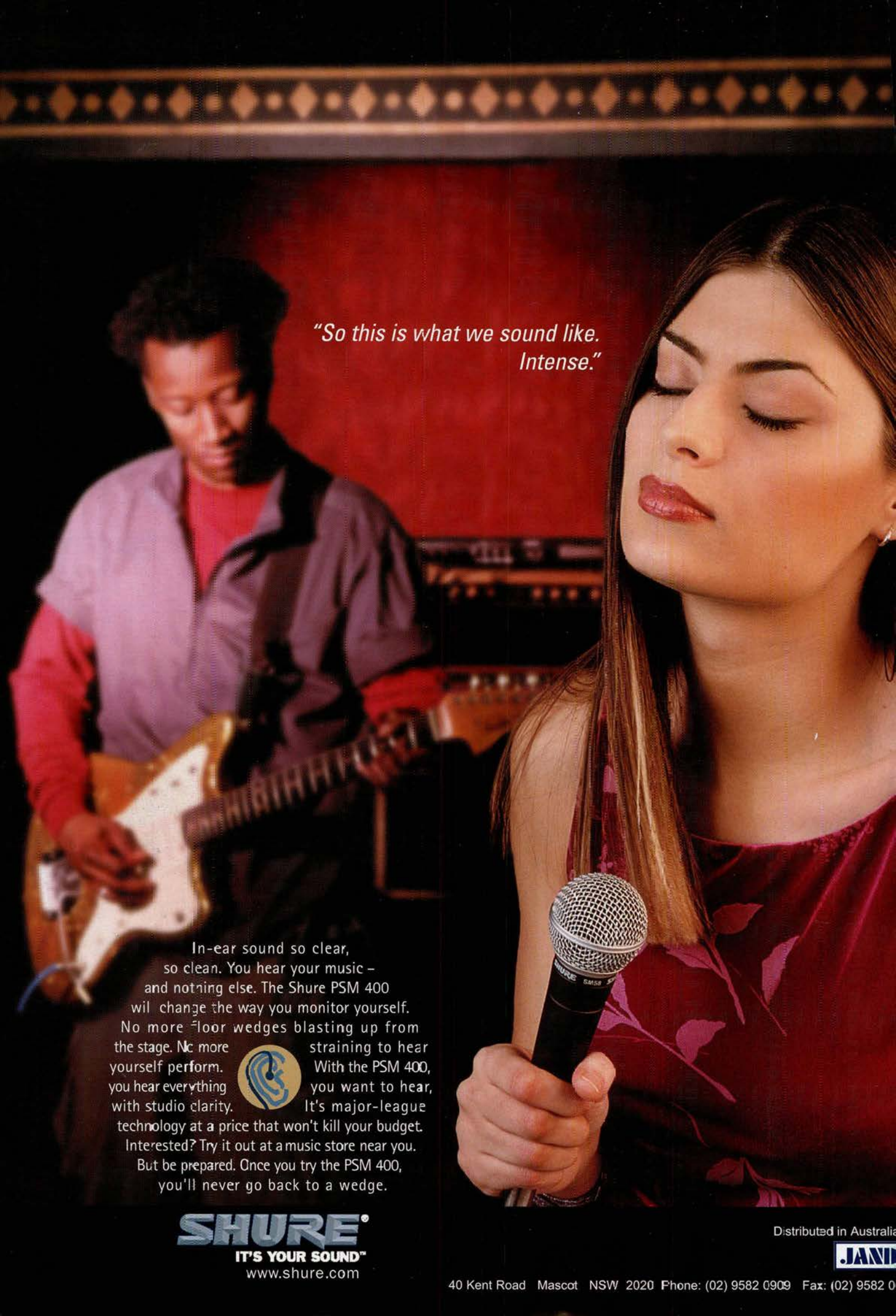
## Christians rampage?

Only Kylie can outsell God – Hillsong pulls huge arena crowds


ISSN 1320-5595



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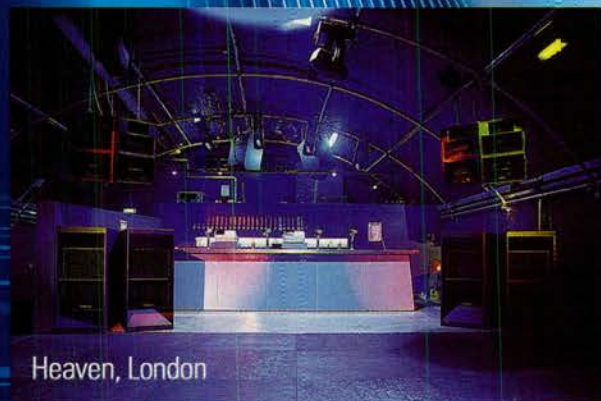
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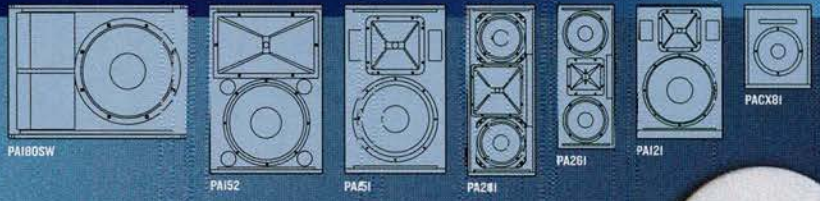
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**From The Editor**

It has now been more than a year since I took over the Editor's chair from Julius Grafton, and the magazine is still evolving – as it always should. In that time, the mag has had a front-to-back makeover, and this issue has the new pullout section, Projector Magazine. Many readers will recall that just prior to my taking the Editor's chair, Presenter Magazine was folded, and its content brought back to Connections.

Two years ago when that magazine was launched, we recognised the exploding growth of the AV industry. What we did not see at the time was the impending convergence of all aspects of technology. For the moment, we see Projector Magazine as not branching away from Connections but as a growing part of our coverage.

I have always had the position that any decent technician not only has to know about his own field of expertise, but also should understand something about how other technicians have to do their jobs. In many cases, it is vitally important that you do know something about other specialities so that you know how best to let these people do their jobs. This is partly why Connections carries a broad spectrum of news and stories from all parts of the professional entertainment technology business.

We recognise that our industry is a constantly changing one, with new technology, changing audiences, expanding (and contracting) companies etc. As such, we are constantly keeping an eye on industry trends. With any publication, there is plenty of praise and even more criticism. While a significant proportion of comments are 'Not For Publication' (a request we will ALWAYS respect), we welcome unsolicited constructive comments. In addition, we regularly poll different readers for their various opinions.

I am happy with the development of the mag, and its current directions. Whether you agree or not, I want to keep hearing from you.

• **John Grimshaw, Editor**  
 john@conpub.com.au  
 or call +61 2 9876 3530



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 Romeo and Juliet**  
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 in the special lift-out...  
 Projector Magazine

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- Oct - Studio Monitors, Remote AV Ctrl
- Nov - Desks: LX and Digital Auto Audio

**NEXT ISSUE:**

Onsale 5th Sept, subscribers earlier.

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# Connections

The Asia/Pacific Professional Audio and Visual Technology Monthly

AUGUST 2001

## DVD-Audio struggles against current

Since we wrote about DVD-A and SACD last April, there has been much speculation about the direction of high definition audio. Where does the local industry sit regarding DVD-A? Mandy Jones investigates:

12 months ago, Managing Director of Coral Sea Studios Brian McCarty told Connections the impact of DVD-A on the recording industry could not be underestimated, likening it to the shift from vinyl to CD: "Record companies want to make this transition. There's an approved format for DVD-Audio and the record companies of course want to sell us the same product again. It's not that different from going from videos to DVD video, people are buying a lot of the same movies again because it's higher quality.

"The difference between DVD-Audio and when we went from records to CD's is that this isn't about a re-mastering process, it's actually a re-mixing process. The artists have to go back to their original master tapes and it gives them a chance to do some new things while still keeping the essential core of what they recorded years ago. And because



DVD-Audios are 96kHz a lot of the recording in the past has been done on analogue tape which many believe had bandwidth far exceeding the cut-off of CDs. So now the artists can go back and really capture everything that's on those tapes," said Brian

But twelve months on, the industry is largely indifferent to the format. Several studios have forked-out to upgrade to the full 5.1 surround format but returns to date have been minimal with only small client and market demand for the format. General Manager of Operations and Finance for ARIA, Lynne Small confirmed the consumer market's nonchalance:

"Basically, as far as we are concerned there are minimal sales of DVDs at this stage, with over 98% of total product sales via CD as opposed to all other mediums.

> please turn to page 67

## Australian exports rise as A.M. launches Euro base

Australian Monitor has expanded its amplifier manufacturing facility in Sydney, citing an upsurge in European business. A European warehouse has been established.

The Australian Monitor Installation Series has also now replaced the Audio Telex brand. This is a complete range of contracting products including mixer amplifiers, power amplifiers, mixers, speakers, zone paging systems and accessories.

"The demand is simply too great and the lead times are too long to continue to supply from Australia. Our goal is to be one of the major global players in audio contracting within 3 years and with such an excellent distribution network throughout Europe and Australasia, we firmly believe we can achieve that goal" says spokesman Stuart Craig

• [www.australianmonitor.com.au](http://www.australianmonitor.com.au)

## ENTECH SHAPES UP-6 MONTHS TO GO

SYDNEY: AN expanded international industry gathering will see industry summits for Pro Audio, Lighting and Vision at the sixth ENTECH. Moving back to Darling Harbour, ENTECH is the largest trade exhibition of its kind in the southern hemisphere.

Pro Audio seminars will deal with subjects like DVD-A and surround, plus key issues like venue sound proofing, EPA laws, future concert sound hearing loss liabilities, and a line array vs. point source debate.

The Lighting educational stream is to be hosted by **Graham Walne**, who will deliver topics on issues in conjunction with leading lighting designers. Vision seminars will be hosted by InfoComm, while general convention topics include Venue Design and Rigging.

Proposals for Seminars and Events close shortly, with the visitors programme in place by the end of September.

Criteria for the sixth ENTECH Awards will be announced shortly.

ENTECH runs Monday February 4 through Wednesday February 6th, at the Sydney Exhibition & Convention Centre, Darling Harbour.

• Meanwhile, **Louise Brooks** has joined ENTECH as Marketing & Promotions Manager.

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# Connections

9th year of publication!

ISBN: 1320-5595

CONNECTIONS is published monthly  
- except January - by  
Connections Publishing Pty Ltd  
ACN 358 443 182  
ABN 66 058 443 182

Mail: PO BOX 439, EPPING  
NSW 2121 AUSTRALIA.

Deliveries: 16 Willoughby street.

Web: [www.conpub.com.au](http://www.conpub.com.au)

Email: [mail@conpub.com.au](mailto:mail@conpub.com.au)

Phone: +61 2 9876-3530

Fax: +61 2 9876-5715

Hours: 0900 - 1700 Sydney.  
After hours try any of the mobile  
numbers below, email, or fax.

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or +61 2 9876-3530.  
Mobile 0408 498-180

Subscriptions: call toll free  
1-800-635-514 or +61 2 9876-3530  
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Bulk sales, dealer sales: toll free  
1-800-635-514 or +61 2 9876-3530  
or email [sarah@conpub.com.au](mailto:sarah@conpub.com.au)

Newsagent sales: NDD code CNC.

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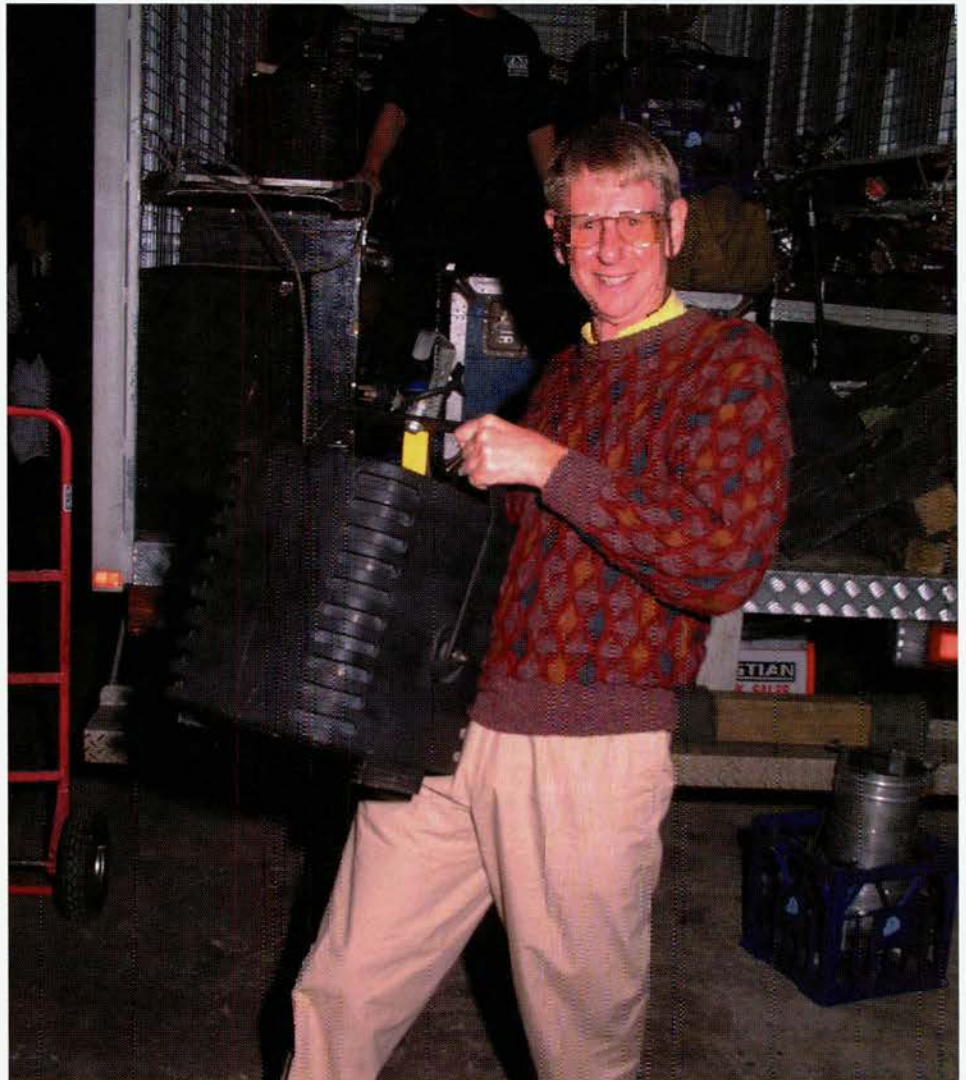
Reprographics: Omicron.

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Platform: Apple Mac, the poor thing.  
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Advertising production & art:  
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## Who is doing what?



Rob with a Pattern 243. Picture: [eventpix.com.au](http://eventpix.com.au)

## Rob Nichols retires

It's not usually news, but it's always a cause  
for a celebration when someone retires after a  
lifetime in an industry like ours.

Sydney lighting industry icent ty **Rob  
Nichols** retired last month, departing Chame-  
leon Touring for a quieter life in the moun-  
tains west of the city. Chameleon threw a  
large bash for Rob, which was very generous  
of them.

Rob is notable as his methods as lighting  
hire manager for Strand Electric in Sydney set  
the scene for how large scale lighting logistics  
are run today.

His methodical and fair nature, and  
willingness to nurture and train younger staff  
meant that people like myself gained a  
valuable education in the why's and where-  
fores of the business.

When Strand was consumed by Rank  
Industries, in a disastrous attempt to  
corporatise the lighting industry Rob was the  
guy they mainly left alone.

A succession of Rank managers, all  
mediocre (and all well remembered), tried to

mess with Strand Hire - and quickly gave up  
when they saw how well run it was.

Finally the conglomerate imploded, and  
Rob went across town to join our old mate  
Roger Farratt at Tony Davies' Chameleon.  
Shortly after Roger died suddenly of cancer,  
and it was Rob who held it all together at the  
grief stricken company.

Rob deserves to enjoy his retirement.

Love you, mate! - **Julius Grafton**

## GIVEAWAY!

To further promote their DMXPlayback show  
recorder, the al. Australian company ENTEC  
from Melbourne is giving away one  
DMXPlayback every month. The DMXPlayback  
is a low cost but powerful, compact and  
robust DMX12 light show recorder. It is  
designed for unattended light shows such as  
shop fronts, museums, trade shows. For more  
information contact ENTEC +61 3 9819 2433  
[www.erttec.com](http://www.erttec.com)



## SMPTTE exceeds expectations for most

More than 75 papers were presented at the Society of Motion Picture & Television Engineers (SMPTTE) biennial Conference & Exhibition last month.

The large trade exhibition component at Sydney's Darling Harbour was very well attended and featured large and vibrant displays by companies such as Sony, Amber Technology, and Syntec International.

Connections spent some valuable time on the trade show floor, and observed a terrific cross section of trade from all over the region.

We also spent time standing in the aisle outside the Fairlight stand (above), which surprised us with its frugality. Fairlight usually stage major displays at trade shows overseas, but tell us that hometown Australia is a very small part of their market. - **Julius G.**

## PROJECTION IMAGING ENGINES

*Thanks for all your calls and emails. Yes, the advert for Hitachi's On Glass Projection System on page 24 last month slipped up over the bottom of the text, rendering the story a complete mystery. We repeat the final two sections here:*

### LCOS – Liquid Crystal On Silicon

The LCOS technology is the newest one on the block, with a slew of manufacturers now bringing LCOS devices to the market. It takes the simplicity and cost effectiveness of a standard LCD, and adds elements of the reflective technology perfected by D-ILA to produce an innovative solution.

The 3-Chip version of the system beams pre-coloured red, green and blue light into three separate LCOS chips. The light is simply run through a polarizing filter and aimed at the chip. At the chip, the light passes through the LCD layer, reflects off the back surface and passes back through the LCD layer. The light then exits the chip and heads towards a second polarizing filter. The three separate coloured images are combined into one image using a prism, and then projected through stand lens optics onto a screen.

A single chip LCOS device uses a colour wheel (in the same way as the DLP single chip option)

to create the full colour image.

It is very likely that LCOS will quickly move to completely replace conventional LCD, largely because of the cost effectiveness of production and two major optical advantages. The first of the two optical advantages are that the pixel pitch (space between pixels) is at least as good as and possibly better than D-ILA. Secondly, the quality of blacks can be enhanced due to the fact the light has to pass through the LCD layer twice before leaving the projector.

### (f)LCD - Ferroelectric Liquid Crystal Display

This type of imaging engine is Samsung's version of LCOS. Elements of Samsung's new product range of rear projection displays use (f)LCD.

### Radars Otari II vs. Iz Radar 24

Yes, last month's Screaming Jets story DID refer to the Radar I, but in actual fact the unit in question is a Radar 24, from IZ Technology. Essentially it's the same as the Otari Radar. The Otari box was made under license. Both are sold in the marketplace. Confused? Nah.....

## LIGHTING ASSOCIATION PLAN FALLS FLAT

A push for an Australasian association "for all who share an interest in the art, science and technology of light" has fallen flat after meetings in Sydney and Melbourne.

Representatives from ten equipment suppliers and a university gathered at the first meeting in Sydney, convened by freelance media publicist **Catriona Forcer-Strom** and regional Pro-Sound News editor and freelance web designer **Andy Ciddor**.

"A business plan for the implementation of the proposal, which was so enthusiastically received, is currently in preparation", trilled a news release afterwards.

The duo circulated a long list of people said to support the proposed association, most of whom didn't attend the meetings. But some we contacted were less than supportive.

"This smells like a job creation scheme" said one, while another pondered the proposal to run product reviews on an association website. "The question of bias arises where the supposed conveners of the association have commercial links within the industry - and both currently write on a fee per word basis".

"There is arguably a need for an association of lighting designers" said a leading designer who preferred not to be named. "But I am already a member of the Association of Lighting Designers. There are probably only 30 full time designers in Australia, and some of them are already members of the Illumination Engineering Society here as well. So I'm not sure where this is headed".

Connections has supported worthy associations in the past. The Australian Screen Sound Guild is an excellent example of an inclusive association of like minded technical professionals.

Showsafe and NETA before it both failed, despite strong expressions of support which failed to transform into action or money.

We don't support this Association proposal in its current form.

- **Julius Grafton**

## Who is doing what?

### Bytecraft On The Move

From August 1st, Bytecraft Entertainment Pty Ltd will be operating from its new Melbourne head office at 2 Monterey Road, South Dandenong.

The new 3,500 sq metre building will house the rapidly expanding Lighting Hire, Lighting Sales and Service department, previously spread over two buildings at Mordialloc.

- Bytecraft Entertainment Pty Ltd; 2 Monterey Road, Dandenong South, 3175 VIC.

Tel +61 3 8710 2555

- In case you missed it last month, Bytecraft Sydney have also moved to: 4/1-15 Rosebery Ave, Rosebery NSW.

Tel +61 2 8344 3800

### Kospro go to Mauritius

WA company, Kospro International have won a contract to supply and fit out new editing facilities for the Mauritius Broadcasting Corporation, using the latest in AVID technology.

Kospro staff will fly to Mauritius to install the facilities and train the MBC staff. Kospro were asked by MBC to submit a tender some months ago, which they did, and **Kim Bryan** (Kospro's Studio/Broadcast Manager) received news about the successful tender, whilst attending the SMPTE conference in Sydney recently.

Kospro International have also installed turnkey systems into Malaysia, Indonesia as well as Australia.

- [www.kospro.com](http://www.kospro.com)

## Allen & Heath de-Harmanised in buyout

The Cornwall, England-based mixer manufacturer has announced a £9 million management buy-out.

The Allen & Heath directors heading the buy-out are managing director **Glenn Rogers**, sales and marketing director **Bob Goleniowski**, finance director **David Jones** and operations director **Tony Williams**. Lead investment has come from 3i, Europe's leading venture capital company, with additional investment

from Bank of Scotland.

This announcement marks the end of Allen & Heath's ten-year spell as a division of Harman International Industries, Inc. Allen & Heath was acquired by Harman International in 1991, since then the manufacturer's turnover has increased tenfold. Allen & Heath's new board will consist of the four current directors, plus two non-executive directors from its investment partners.

## Music Travel Grants

The Association of Independent Record Labels Ltd (AIR) and the Music Managers' Forum (Aust) Ltd (MMF) have joined forces to secure two new and much needed travel grant schemes for Australian music industry professionals and businesses.

The brainchild of AIR and MMF, 'The International Extensions Fund' and 'Regional Business Growth Fund' support Australian music industry professionals travelling nationally and internationally for specific industry business purposes.

The funding for these schemes, totalling \$200 000, has been made possible by the Australia Council, the Commonwealth Government's arts funding and advisory body, through its Audience and Market Development Division. The 'International Extensions Fund' has been set up to support investment made by Australian music industry professionals and businesses in developing further export markets.

The 'Regional Business Growth Fund' has been established to contribute to the development of local infrastructure in regional areas and cities outside the metropolitan areas of Sydney and Melbourne. Regional grants have been created to assist music industry professionals overcome distance barriers for Australian artists, music industry professionals and small businesses, enabling them to build a stronger national networking base.

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

## CLS and Browns Welding

MELB: At presstime Concert Lighting Systems announced they have accepted settlement of a long running dispute with Browns Precision Welding. New Browns owners Lightmoves Pty Ltd have undertaken, say CLS, not to build certain truss products. The dispute involved Browns allegedly copying CLS designs and intellectual property.

## DSP Media step up sales

Loyal DSP Media customer and Australia's largest radio network, DMG Radio, has ordered three more P-16 Poststations. The equipment will be installed in the radio network's Melbourne-based station and increases the number of Poststations owned by DMG to thirteen nationwide.

"We like how multiple DSP Media Poststations are completely networkable. Secondly, the Poststation has fast production turn around, which is imperative in this industry. And finally, the system is ergonomically designed so a producer can work for hours without getting physically tired," said **Steve Adler**, Network Manager for DMG Radio Australia.

DMG Radio Australia owns 61 stations in five Australian states including Queensland, New South Wales, Victoria, South Australia and Western Australia.

- [www.dspmedia.com](http://www.dspmedia.com)



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*What will you be using soon?*



## 16 tracks, one box. Two pro level devices, two different ends of the market.

It may be smaller and not have waveform editing, but the Yamaha AW 2816 (above) is a powerful box.

Boasting 16 tracks of 24 bit recording, this little brother to the AW4416 is based on the 01V digital mixer.

While the 01V sells at A\$4445, the AW 2816 sells for just 50 bucks more. This weird price arrangement will probably see many more AW 2816's sold than 01V's, but the little 'V' is a favourite of anyone who works with AVID, so obviously Yamaha know what they are doing!

As you can see from the picc there is an option slot for a CC-R, which can do the mastering for you.

Aw gives uncompressed recording (unlike some other similar looking but amateur specified boxes) with 16 tracks plus a stereo pair. The mix section boasts 28 input channels with 18 mix busses and motorised faders.

It has an expansion slot for a Yamaha YG-DAI card for a variety of input and output options.

There is a website at [www.aw2816.com](http://www.aw2816.com) that tells the whole story.

Yamaha say you can buy this at A\$4499.

• Yamaha +61 3 9693-5111

Tascam's SX-1 (below) puts an automated digital mixer, 16 track hard disk recording, MIDI sequencing, and mastering capabilities together.

The SX-1's feature set includes a 40 x 8 digital mixing console with 100mm, touch sensitive faders, advanced built-in dynamic automation, and 16 high-quality phantom-powered mic preamps.

The 48kHz, 24-bit, 16-track hard disk recorder uses an internal IDE disk drive, while additional IDE and SCSI drives may be connected to the SX-1 via a front-panel slot or a rear panel SCSI interface.

Waveform, MIDI, and automation data editing draws this device apart from almost anything else we can think of.

It boasts complete surround mixing capabilities with the ability to record a full 5.1 mix to the internal HD in addition to the original 16 audio tracks.

It also hosts a 128-track MIDI sequencer with advanced editing modes that are available on the fly, with standard and step record modes. Each of the 64 MIDI outputs can be mapped to channel strips on the console, and channel strip faders and knobs can then be assigned to output MIDI channel or custom, user-defined MIDI messages.

There is a built-in CD-RW drive for printing surround or stereo mixes, data backup and archiving, and importing sounds from audio or data CDs.

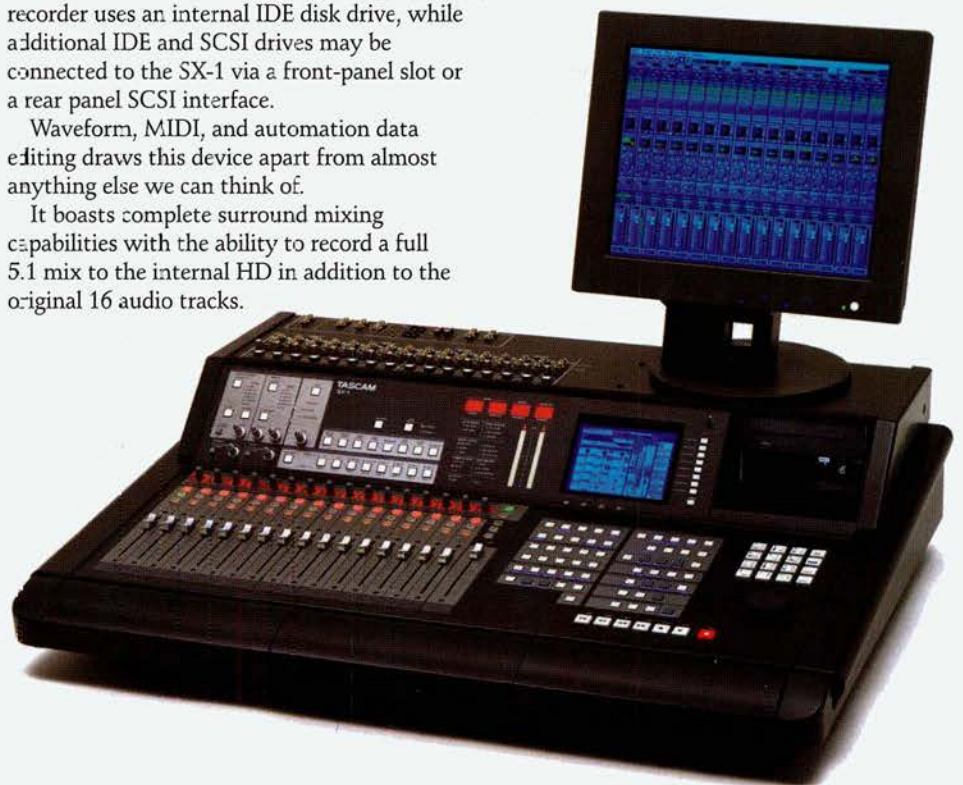
Tascam have incorporated DSP plug-in technology that offers built-in effects by TASCAM, TC Works and Antares as standard features as well as the ability to add new effects as required.

Interfacing includes (16) balanced XLR inputs, (16) 1/4" TRS line inputs, TRS inserts on each analog input, and an onboard speaker switcher. There are eight channels of ADAT Optical digital interface, two stereo S/PDIF inputs (with sample rate conversion) and outputs, wordclock, two MIDI inputs four MIDI outputs, a SCSI port, two USB ports, a 100Mbps Ethernet jack for FTP capabilities, separate studio and control room monitoring and more.

Finally, there are expansion slots for 24 more channels of digital I/O (including optional multichannel interfaces for AES/EBU, TDIF, ADAT Optical) or additional analog I/O.

Expect to see this unit next month, at a price around A\$18,000.

• Tascam SRD +61 3 9682-0411



# Everyone's Listening and Everyone's Talking



## ...about Sony's DMX-R100 Digital Console

With over 500 units in Europe alone, there are now thousands of users worldwide offering testimony to our DMX-R100 digital console. So what are they saying? Which features do they use?

**The biggest single talking point...** the sound quality!

After we developed a small-format console with eight bus digital mixing, designed for stereo and 5.1 surround operation with emphasis on quality and ease of use.

The R100 can operate with sample rates up to 96kHz, using quality, 24bit converters and high speed SHARC Digital Signal Processors. Its 56 input channels include 24 analogue inputs as standard and a total of 18 output buses can be configured to suit the application.

The 48 full channels, Mix, Multitrack and AUX send buses all boast 4 band fully parametric EQ (plus 48

point high and low cut filters) as well as Dynamics control with Compressor/Ducking and Expander/Gate.

Creative mixing is yours with the R100. Up to 99 Snapshots/Cues per title provide static recall including input/output routing while smooth, time-code automation is also applied to the quality touch-write faders and all EQ/Dynamics controls.

To centralise your system the R100 has a built-in machine controller for Sony 9-pin, MIDI and T/C chase.

**So, by all means listen (your golden ears will never be the same) but please appreciate the operational features of the R100. Your projects and creativity certainly will.**

Call 1800 017 669 for further details (for Sydney call 9878 9736) or check-out [www.sony.com.au/proaudio](http://www.sony.com.au/proaudio)

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**SONY**

What will you be using soon?



**GENTNER debut new conferencing and matrix products**

Gentner's new XAP 800 (above) is a highly-advanced audioconferencing system. It features Gentner's proprietary distributed echo cancellation and exclusive noise cancellation technology for reduced echo and noise. Twelve echo cancellation reference points provide easy setup and better echo cancellation performance.

The XAP 800 is built upon Gentner's new software platform, G-Ware. This software has already proven successful in providing easy programming of Gentner's PSR1212 Digital Matrix Mixer.

The PSR 1212 is an interesting box - offering essentially any 12 in, and any 12 out. It is just one rack unit tall, like the XAP 800 pictured above.

Selling at under \$11 grand in Australia, the PSR 1212 could perform a wide variety of DSP functions for an installed audio system.

It offers RS 232 control off a laptop or from a PC, using Gentner's new G-Ware software. You can download this at [www.gentner.com](http://www.gentner.com), and go make a sound system.

There is an expansion capability too, with the boxes set to take precedence by the user.

This is to our knowledge the physically smallest 12 in, 12 out DSP box on the market. All audio input and outputs are on the back, rather than on a break out box.

There are 32 user defined presets in each box too, so you can establish a variety of functions, wired to switches or a touch screen, or fired from a Crestron or AMX controller.

• **Production Audio Services,**  
+61 3 9415-1585

XAP 800 (above) is built upon Gentner's new software platform, G-Ware. Download a copy at [www.gentner.com](http://www.gentner.com) - G-Ware also configures the new PSR 1212 DSP matrix.

**An ordinary amplifier?**  
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**LIGHTER** - Pulse's switched mode power supply reduces amplifier weight by as much as 70% compared with ordinary amplifiers, as well as helping them run cooler. The power supply is very stiff, so pulse amps also sound better, especially when driven hard at low frequencies.

**STRONGER** - Pulse amplifiers are built with a steel chassis, with rigidity added by the heat-sinks. Together with low component weight, these make them inherently stronger than ordinary amplifiers.

With optional plug-in crossover cards, and remote control via C Audio's Connect system, Pulse can be used in almost any application without compromise.

<p><b>Pulse 2 x 1100:</b> 2 x 1100 watts into 4 Ω. 1 x 2200 watts (bridged)</p>	<p><b>Pulse 2 x 650:</b> 2 x 650 watts into 4 Ω. 1 x 1300 watts (bridged)</p>	<p><b>Pulse 4 x 300:</b> 4 x 300 watts into 4 Ω. 2x 300w &amp; 1 x 600watts &amp; 2 x 600 watts (bridged)</p>
---	---	---

**Contact Corporate Audio Services now for a full information brochure and to find out why Pulse is no ordinary Amplifier.**

**Corporate Audio Services** 188 Plenty Road Preston VIC 3072  
**Telephone:** 03 9474 1066 **Facsimile:** 03 9474 1070  
**e-mail:** [mail@corporateaudio.com.au](mailto:mail@corporateaudio.com.au)

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# élite

# L-Series

## LOWER - LOUDER - LIGHTER

SPEAKER SPECIFICATIONS	L368	L418	L704	L804
System (2 or 3 way) config	3 way	3 way	3 way	3 way
Power (W PGM)	350	400	700	300
Impedance (Ohms)	8	8	4	4
Sensitivity (dB @ 1W/1m)	111	102	102	103
Frequency Response (Hz)	45Hz(-6dB)-17000Hz	45Hz(-6dB)-17000Hz	45Hz(-1dB)-16000Hz	45Hz(-2dB)-16000Hz
Crossover Frequencies (Hz)	175Hz/3000Hz	250Hz/1600Hz	250Hz/1600Hz	150Hz/1600Hz
H-F Driver	4EB HD 120	De600	De600	De600
Mid Driver	1x3"	2x6"	2x6"	2x6"
L-F Speaker	1x12"	1x15"	2x12"	2x15"
EI Amplifiable (Y or N)	N	Y	Y	Y
Connectors	2xSpeakon 4	2xSpeakon 4	2xSpeakon 4	2xSpeakon 4
Dimensions (HxWxDxBxV)cm	13.5x59x46x38	78x71.5x55.5x4	92x72x48.5x50	131x71.5x57x45
Weight (kg)	3.5	47	56	63
Wheels	N	N	Y	Y

The new élite line features Neodymium low frequency speakers, a new midrange driver arrangement and whole new reflex cabinet design.

The first thing you will notice about these new cabinets is that they are now true three way boxes. The low frequency driver has been canted inward to realise 2-3dB greater efficiency, by mutually loading vent and woofer cone. The new midrange drivers have a directional baffle for a far more even dispersion angle, providing more presence in the vocal range, eliminating "lobing" for off axis listeners.

During extended high SFL performance the unique heat dissipation system incorporated into the new neodymium driver means very little heat-induced impedance shift. This ensures all of the new élite boxes have less power consumption.

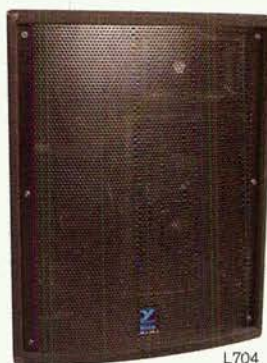
All of the new élite line has Yorkville's two year unconditional (even if you break it) warranty.



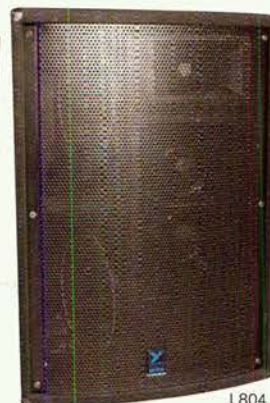
L368  
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inc. GST



L418  
**\$2895 RRP**  
inc. GST



L704  
**\$3395 RRP**  
inc. GST

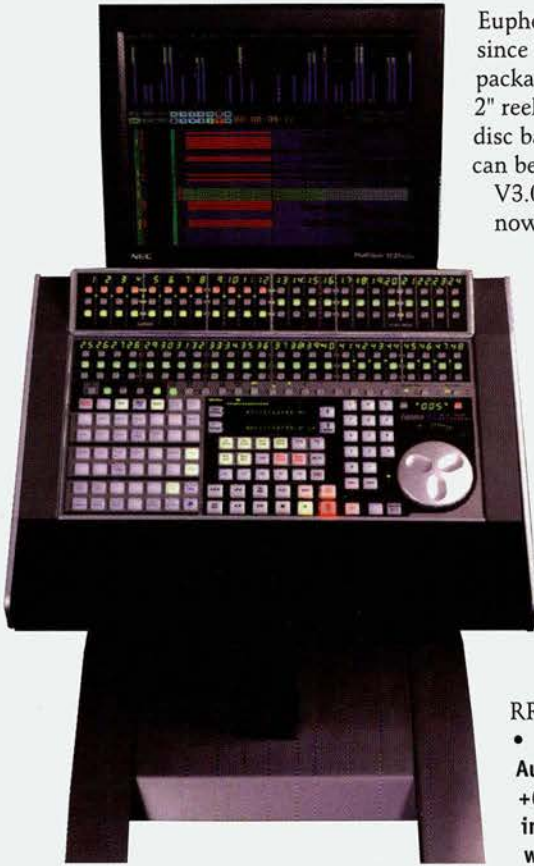


L804  
**\$3595 RRP**  
inc. GST



What will you be using soon?

## R-1 ups spec, will record 96 tracks



Euphonix R-1 has travelled well since launch a few years back. The package has the traditional feel of a 2" reel-to-reel - but of course is hard disc based. Fully scalable, the system can be optioned for up to 96 tracks.

V3.0 software, released this year, now equips the R-1 with comprehensive editing facilities, file transfer using Broadcast Wave Format including multi-channel transfers to DVDA authoring systems, Wave Form Display with visible crossfade times, Bars, Beats & Ticks with selectable internal click tracks, transport enhancements for faster location to edit points and 'Trimming-The-Reel' and more flexible internal input and output MADI routing.

Cost: Starts from \$90,000

RRP

- Euphonix is distributed in Australia by Technical Audio Group +61 2 9810 5300 info@tag.au.com www.tag.au.com

## Wireless Codec!

Comrex Matrix is a wireless codec - meaning you can broadcast from just about anywhere. As a plain telephone codec, the Matrix delivers 15 kHz full duplex audio on one standard telephone line. An optional slide-in module allows the Matrix to operate on ISDN using Layer III or G.722 for maximum industry compatibility. The Matrix is also capable of improving the quality of GSM wireless phone feeds.

I had a demo at SMPTE - the Matrix made a connection with head office, and we heard recorded speech quite distinctly. Sure, not great, but better than just over the mobile.

The data port on the Matrix enables direct connection of a GSM phone without the need for a module. Another option for the Matrix is a NiMH battery that can power the unit for up to 7 hours.

- Production Audio Services, +61 3 9415-1585



two phono or three line inputs and master balanced/unbalanced outputs. There is direct input for onboard CD units and EQs on main input channels. Input for 2 external microphones with independent gain control is provided as well as an EQ Crossfader to blend between two channels and control auto-start of the CD units. Other features include a three band equalizer for master output, dual band, 12-segment LED output display, and headphone output for 1/4" and 1/8" style plugs with the ability to blend cue any channel.

The unit will be priced at \$1699

- Contact the distributor Show Technology for more information +61 2 9748 1122.

## CD MIX-2 boasts Anti-Shock Buffer Memory

Numark's CD Mix-2 takes CD MIX-1 and adds several features requested by DJs. These features include a second mic input with separate EQs, an additional line input, EQs on each channel, true buffered instant start, seamless looping, blend headphone cue, and our patented anti-shock technology.

The CD Section has two independent CD units and full buffered anti-shock. There is seamless looping and stuttering and the CD has the ability to play 3", 5", and CDR discs.

A pitch/jog wheel for both setting cue points and adjusting tempo is incorporated in the design. Three search speeds are available and a large backlit LCD provides display.

Added features are track sequence programming, time button with elapse and remain time bar. Single and true continuous play modes are possible.

Other features include 8 and 16% percent pitch adjustment; auto dead space elimination; ability to auto-start player with use of the crossfader and auto door close transport protection.

The Mixer Section has external input for



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What will you be using soon?

## KLOTZ MULTICORE SYSTEMS



German cable manufacturer Klotz have revised their multicore products with a new range of standard one-piece hard-wired stagebox/cable/XLR multicores plus an expanded Concert range of multipinned, individual components with various derivatives and customised solutions.

The new Concert range consists of two basic formats; one using the rectangular Harting multipin connector and the other the circular Litton-Veam 'Tour-Lock' connector. Both formats are available with a common earth or, for applications requiring more flexible earthing, individual earths with ground lift switches.

All the stageboxes in the Concert range are

blue anodised rackmount types with 4mm thick aluminium front plates and stainless steel full length handles. Although a single multipin stagebox is available the standard configuration employs two parallel multipin sockets, one for FOH and one for monitors, each with locking retainers. Stageboxes for the individual earth systems have the addition of earth lift switches mounted on the front plate one for each return plus a single overall switch for the monitor sends.

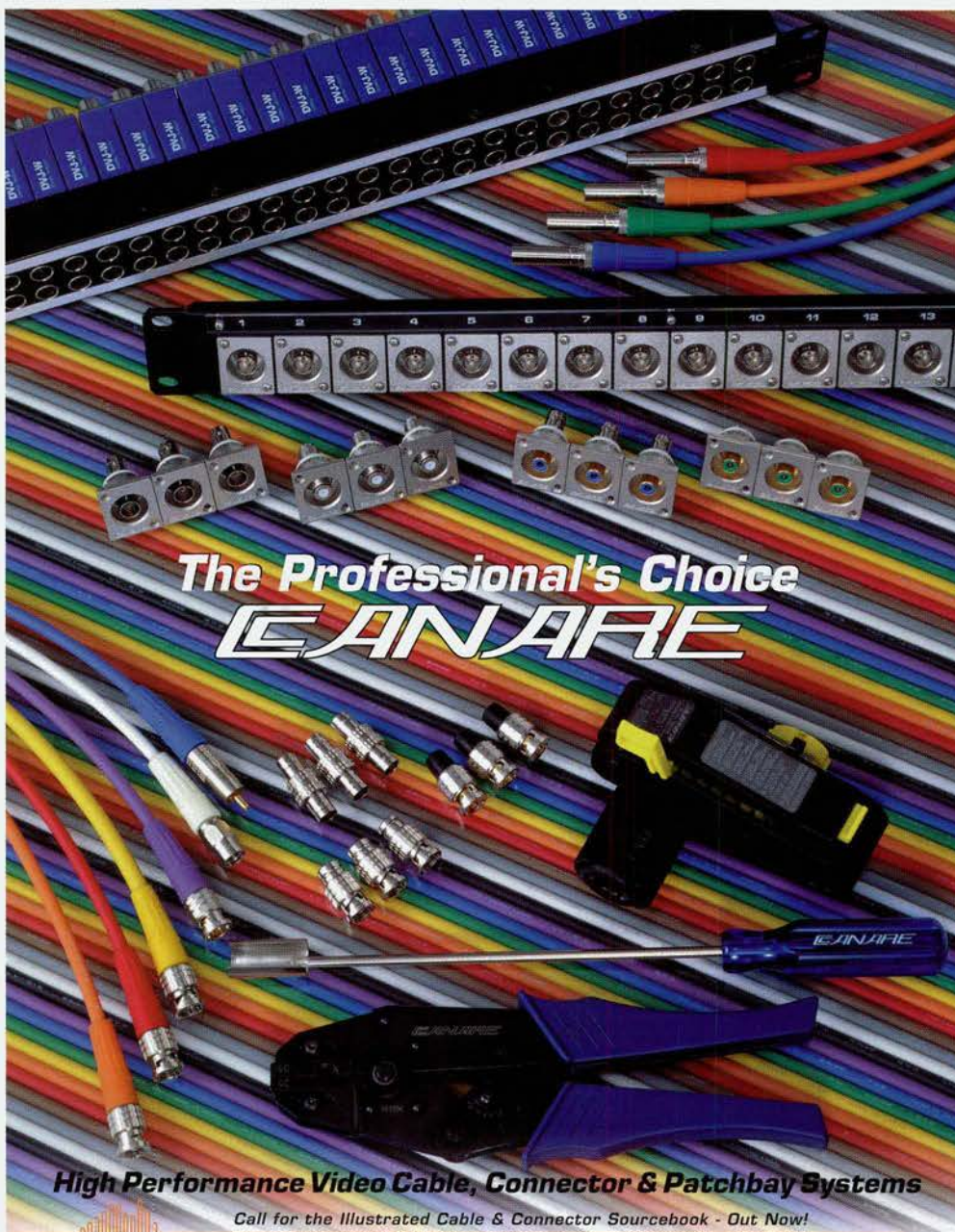
The multipin-to-multipin snake, typically 50 meters, can be ordered in any length and is supplied in a reversible female-to-female format

with locking waterproof dust caps. Extending the system requires an additional non-reversible male-to-female unit. Two types of multicore cable are optional, the low profile heavy duty OB style 'PF' with individual and overall foil shields or the 'PS' which offers the same construction as 'PF' with the addition of an overall tightly woven braid.

The FOH XLR fan, which commonly remains permanently attached to the FOH console, is a total of 3.5 meters long with male multipin line connector, 2 meters of multicore with steel wire cable restraint, a heavy duty breakout housing and individually shielded cable fan-out to numbered XLR's. The 10 meter monitor loom is largely similar but contains only the input channels.

Cost: The Harting 32 input/8 return 50Mtr system (KMH32/8/50) pictured has a retail price of \$A10,780 and is a standard and a stock item at TAG. For custom derivatives and configurations Klotz can build and deliver to Australia within six weeks.

• Klotz is distributed in Australia and New Zealand by Technical Audio Group +61 2 9810 5300 [info@tag.au.com](mailto:info@tag.au.com) [www.tag.au.com](http://www.tag.au.com)



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What will you be using soon?



## Mastercolour Optical – New Technology

Philips Lighting have released a new generation of Special Optical Lamps - Mastercolour Optical, CDM Short Arc (SA). The compact high-pressure discharge lamp, with its short arc for precise optical control, has been designed for use in fixtures which create advanced light effects on small stages, in nightclubs, at events etc.

Its ceramic burner technology ensures that the CDM-SA 150W not only has a high light

output; it also has very good colour rendering properties, a very good red rendition and a stable colour temperature over life.

An important feature is the colour homogeneity over the beam. The translucent ceramic burner material can be made with more precision compared with a traditional quartz burner. Apparently, not only does the colour temperature remain stable during the average lifetime of up to 6,000 hours, but also the colour temperature of individual lamps within clusters appear the same.

The short (6mm) axial discharge arc allows the construction of high-performance optical systems with high beam intensities. It enables advanced light effects to be created that are also clearly visible on a bright background. Until now, such effects could only be achieved with 1,000 W high-voltage halogen lamps.

The Mastercolour Optical Lamps are available in Two versions:

- The CDM-SA/T, a tubular lamp equipped with a single-ended G12 cap, has a total length of max 100mm and a light center length of 56mm.
- The CDM-SA/R lamp, an elliptical reflector lamp with a working distance of 75mm, equipped with AMP connector cables with a length of 250mm.

**For more information please contact your Philips Lighting stockist.**

## Neutrik Powercon



Neutrik have introduced a locking 3-pole mains power connector that uses the same reliable connection proven by the Speakon range.

This range includes the blue "Power In" and white "Power Out" connectors, designed so that the obvious colour coding would denote the correct connector to use. So many manufacturers (eg SGM on the Giotto) are already using this connector on their equipment. The connectors are rated to 20A 250V. **For more information, contact Amber Technology on +61 2 9375 1211**

## Affordable Intelligent Lighting

The Pocket Scan is a new intelligent light from American DJ and is now available through Lightsounds. The lightweight Pocket Scan is an 'almost-pocket-sized' effect that can be operated as either a colour/gobo scanner or a sharp-beam laser - or both at the same time. A DMX-compatible fixture, the Pocket Scan can 'double up' and produce dual effects because it features simultaneous halogen and laser operation.

Loaded with on-board visual effects, the Pocket Scan is equipped with 15 colours plus white including split colours, along with 14 gobo patterns. Designed to cover a lot of ground and produce sharp, vivid gobos, the Pocket Scan features a full-focusing lens and X/Y mirror movement with 170-degree pan and 110-degree tilt.

To create its laser effects, the Pocket

Scan includes a 5mw Laser Diode with X/Y mirror movement. The Pocket Scan can be operated with a DMX controller, allowing users to create their own programs. Or, it can be run as a sound-activated effect to the beat of the music, or in stand-alone mode to its own internal programs.

An extremely portable little unit, it is great for places where space is at a premium. The Pocket Scan offers the ability to operate as both a scanner and laser creating a unique light show with one unit. The Pocket Scan even has a digital DMX LED display, eliminating the need for dip switches to set the DMX setting, making it easier to use. The Pocket Scan comes with an EFP 12-volt, 100-watt, 1000-hour lamp. Cost: \$799 RRP

**Distributed by**

**Lightsounds:  
1800 22 33 00 or visit  
www.lightsounds.com.**



# MAC 2000

## Attention to Detail

### Optics

The quality of the MAC 2000 optical system is unparalleled in the lighting industry. Martin engineers have combined an ultra-efficient 10-lens system with efficient parabolic glass reflectors, resulting in extremely high output and the highest quality projection characteristics available.

Quality that only comes from attention to detail.

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Multiple effect wheels combine to create unique Moiré, morphing, iris and 3D effects (all wheels house glass gobos)

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### Operation

Newly developed 3-Phase Motor Technology ensures fast and smooth movement

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What will you be using soon?

## Flamin'On



Light Emotion has joined numerous other manufacturers and released a safe flame effect using the popular silk/fan/light effect. Flame Lights come in two designs - the hanging flame light will hang 95cm from the roof and is 36.5cm in diameter and the standing flame light is 186cm free standing.

From any distance, the effect emulates a realistic fire. Hanging Flame Lights RRP\$395 Standing Flame Lights RRP\$459.

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## Magtrax Surround Sound Monitor Controllers

As the trend towards integrated recording, editing and mixing technology gathers pace and new digital formats appear, Magtrax believe that a flexible and transparent monitoring system is becoming vitally important. The surround sound monitoring controller manages the numerous sources and the multiple speakers.

The first Magtrax monitoring controllers were developed for the UK film industry over 10 years ago. Recently the five 'Select' controller models have been upgraded offering multi format support via a common expandable hardware/software platform & compact desktop remote control.

Magtrax Select models feature LCRS and stereo downmix outputs; metering outputs;



speaker solo and cut; preset monitoring levels; virtual or phantom speaker positions; bass management and balanced outputs. There is a virtually limitless input flexibility and expansion capacity using 8 channel AES-EBU digital input or analogue cards. Powerful insert facilities, when fitted, manage the full range of surround encoders and decoders such as Dolby and DTS.

The Magtrax Select product was released in Australia by Neotec Audio at the SMPTE Exhibition in July and compliments the range of PMC monitor speakers, SADiE digital audio editors & DVD authoring workstations also represented by Neotec Audio.

• **Neotec Audio:** +61 2 9873 3994  
info@neotec.com.au

## New Powered Speaker from SoundTech

SoundTech have released a new powered speaker, which retails at just \$999 inc GST. The SoundTech AC12TPE is a trapezoidal 12 inch enclosure which provides a powerful 200 watts with significant bass response.

The ACT12TPE is finished in strong Dura Hide and offers level control, low cut filter and bass boost. Both the price and performance ensure this unit will be very well received in the DJ market. A non-powered version, the AC12T is also available and retails for just \$389 inc GST.

• **For more information, contact Audio Telex on**  
+61 2 9647 1411



## IDT Prepare for flat panel LCDs



Image Design Technology P/L (IDT) of Chatswood, NSW have announced the signing of an Australian Wide Exclusive Distribution Agreement with In-Formation Display Technologies of Miami, Florida manufacturers of the Luce and Helios Line of Flat Panel TV's and Monitors.

The Luce product line features 12" to 22" LCD Flat Panels with in built tuners and sound systems. The first models are expected to include HDTV capable tuners. Combining high resolution with video capability the Luce line are ideal

for homes, offices, yachts and many other applications where the convergence of PC and video is required. These stylish panels come in a variety of sizes and finishes to cover most applications. Demo units will be made available from IDT within the next few weeks.

IDT are currently seeking interested resellers to represent these products. Those interested should please contact Robert Moss of IDT on 02 9417 4924 or Robertm@idt.com.au.

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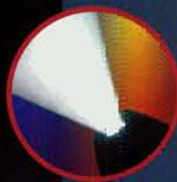
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 f2 lens ensures maximum output at all beam angles



**Innovative**

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**Bright Yet Quiet**

13,000 lumens  
 Minimal fan noise

\*features vary by model

What will you be using soon?

# Turbosound Release NEW TL Series



(above) TL1561  
(right) TL1800

Turbosound is increasing its 'affordability' with the release of the new UK Made TL Series Speakers. The TL Series is a range of speaker enclosures that includes full range 12" & horn and 15" & horn enclosures, a 3-way enclosure and three subs.

The TL series enclosures are passive loud-speaker systems designed for a wide range of live sound and fixed installation applications. All TL series full range enclosures use a 1" high frequency compression driver on a 70 degree horizontal x 40 degree vertical constant directivity horn. This is intended to provide a bright vocal sound quality that will cut through high ambient noise levels such as in pubs, bars and clubs.

TL series enclosures are constructed from

birch plywood, and are finished in durable TurboBlue textured paint. Flush handles, pole mount fittings, M10 internal threaded rigging points, rubber feet and perforated steel mesh grilles are standard. Bass enclosures are fitted with integral passive crossover networks that allow TL-1201, TL-1501 and TL-1561 enclosures to be connected without the need for additional amplifiers or external crossovers. Simply connect the amplifier output to the input on the bass cabinet and link to the full range cabinet. Speakon NL4MP connectors are used throughout the range. The TL1201, 12" and horn retails for \$1759 (inc gst) For more information contact Audio Telex on +61 2 9647 1411 [www.audiotelex.com.au](http://www.audiotelex.com.au)

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The enhanced panel brightness reaches 700 cd/m2 for the 42" and 500cd/m2 for the 50", without affecting product life.

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For further information, contact Fujitsu on +61 2 88222500

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Hillsong

# No drugs, no booze, no plucking

*Security staff idle as crowd refuses to body surf to top UK youth band, with no one to pluck from the masses.*

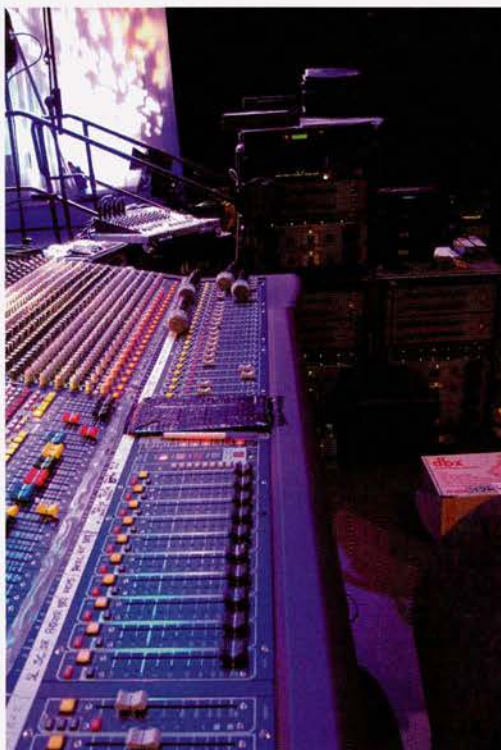
*Massive crowds set new standard as Hillsong Conference takes over Olympics site.*

*Christians rampage as The Book is opened!*

*Julius Grafton was there.....*



Monitor desk at SuperDome



Five consecutive days and nights at Sydney's largest indoor arena, The SuperDome, last month underscored the growing strength of the Christian market as the Hillsong Conference rolled into town. The conference drew delegates from 37 nations for five days and nights of meetings and educational seminars, 580 events in all. These culminated in massive rallies each night, featuring a full band, singers, dancers, and a large choir.

The SuperDome, itself struggling for business after the Olympics, played perfect host according to Hillsong management. Its various function spaces were all fully utilised each day, as were the nearby State Sports Centre and three public schools. A total of 47 separate venues ran concurrently, each requiring technical support.

As conventions go, this was the largest we've been to in the region, with the possible exception of the German SAP software Goliath. SAP Australia's event attracts less heads but spends slightly more dollars. Hillsong runs on a budget of over \$2 million for the week, and it is the peak event for the church by the same name

which has two huge facilities — in Sydney's north west and the city. It is the only convention in the region that boasts five consecutive days of large scale arena events.

Proceedings quickly become clear when talking with David Watson, the full time production manager from Hillsong. He and assistant Kevin Watts head a virtual army of volunteer technical crew, 150 of whom were onsite during the week. Into the potentially messy environment came limited professional crew 'with the right attitude' from Jands Production Services, Chameleon Touring Systems, The PA People, Norwest and Lots of Watts. Philby Lewis from Lots was in charge of production company co-ordination, providing an insulation layer between Hillsong and the commercial end of our industry.

## TOO BIG AT HOME

Hillsong's management decided to look further afield for a venue after last year's event overloaded their district, causing traffic gridlock and saturating every possible venue. It was so popular that the convention was actually run twice, back to back over two weeks. District venues around the northwest were simply unable to cope.

The SuperDome management have bent over backwards according to Hillsong, and



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CONMS4

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## Hillsong

## CREW

**Event Manager:** Cassandra Langton  
**Production Manager:** Dave Watson  
**Production Co-ordinator:** Kevin Watts  
**Technical Manager & Audio Director:** Ian Baldwin  
**Lighting Director:** Ian Anderson  
**Stage Design:** Lyn Ollis  
**Technical Co-ordinator:** Philby Lewis

**Superdome Arena Crew**  
**FOH Audio Engineer:** Trevor Beck  
**MON Audio Engineer:** Nick Asha  
**Broadcast Audio Engineer:** Matt Barnes

**LX Operators:** Ian Anderson; Stuart Anderson; Liz Lewis  
**Head Stage Manager:** Mel Marcin  
**Audio System Engineers:** Richard Kershaw; Ian Cooper  
**LX System Engineers:** Paul Collison; Tim Alder; Pat Clarke  
**Vertec Technicians:** Bobby Daniels; Matt Debien

**SuperDome Venue**

**Operations Co-ordinator:** David Banks  
**Technical Co-ordinator:** David Sykes  
**Security Manager:** Tony Edwards

**State Sports Centre Arena Crew**

**Technical Director:** Matt Barnes  
**FOH Audio Engineer:** Matt Fordham  
**Monitor Audio Engineer:** Peter Wallis  
**LX operators:** Cameron McAndrew; Shez McArdle; Claire Randall  
**Stage Manager:** Kath Bartimote  
**Audio System Engineers:** Phil Lake; Andrew Crawford  
**LX System Engineer:** Jeff Morgan

## Equipment List

**Superdome Arena Audio**

2 x Soundcraft Series 5 48 mixing console (1 x FOH, 1 x Record),  
 1 x Midas Heritage 3000 48 mixing console (Monitrcs)  
 1 x Allen & Heath GU200 24 mixing console (FOH side car)  
 1 x Mackie 1402 mixing console (MON side car)  
 1 x Yamaha MX200 18 mixing console (brass submix)

**FOH Speaker System**  
 36 x JBL Vertec cabinets powered by Crown MA5002 amps  
 8 x EAW S13 1C00 sub cabinets powered by Crown MA5002 amps  
 8 x EHT mid high cabinets + amps (front fill)

**Monitor System**  
 20 x active wedges on 10 sends  
 3 x PSM 600 wireless IEM  
 4 x PSM 600 hardwired IEM  
 1 x Yamaha SPX 900

**FOH Drive & FX**  
 3 x dbx 480 Driveracks  
 1 x dbx 480R Driverack remote  
 2 x dbx2231 dual EQ's  
 1 x LD606 line drivers  
 2 x dbx 160x comp  
 1 x dbx 1066 stereo comp  
 4 x dbx 900 frames (16 x 903 comp,

have a staff culture which has been 'can do' and co-operative. Attitude is something that goes both ways, since most Christian events are generally populated by people who are positive and constructive.

Hillsong itself is the largest church of its kind in Australia, a bible based house of worship which is a member of the AOG denomination – essentially Pentecostal. Hillsong's facilities at Baulkham Hills in Sydney's northwest and at Waterloo near the city both have extensive audio visual and TV facilities.

The Hillsong church format is informal and sometimes gently derided outside its walls as 'charismatic' or even 'happy and clappy'.

## CHURCH FORMAT

The evening rally at the SuperDome was not dissimilar to a standard Hillsong church meeting. At exactly the scheduled minute, a large (15 member) band strikes up. Usually comprising several guitars, bass, drums, several keyboards, and sometimes brass and woodwind, there are also up to eight main singers along the front of the stage. A choir are located to one side, and at the convention several dancers were also featured during several uptempo numbers.

The music is all from a kind of Christian soundtrack, material written for and by Christians – some of it was not unlike an Amy Grant concert I went to years ago. As the music starts, the audience stand and sing along to words projected on large screen video. These audiences are very enthusiastic, and it's hard not to be caught up in the feeling.

Four or five songs are performed first up,

the last couple by Darlene Zschech – a high profile singer in this community. The pastor then comes out and vibes up the audience, there is usually some televised clips of happenings interspersed, and a main sermon is delivered. It's all pretty easy to take most of the time.

The audience are a mix, a lot of younger teens but right through to older middle-aged. It is a young crowd by common church standards.

What struck me was that I was in a 17,000 seat venue, with a 36 cabinet Vertec line array pounding away, and a full lightrig in full roar. This gig had all the concert technology, minus the attitudes and nefarious stuff we all see backstage. The groupies were there for God, and on the night the UK band Delirious played, the security were disappointed as they had hardly anyone to pluck from the moshpit.

## PUTTING IT TOGETHER

Ian Baldwin was the guy who mixed the live sound at the Olympics for Bruce Jackson. He masterminded audio for the Convention, and decided a Vertec system would do the job nicely. This is JBL's new line array, of which Jands Production Services have purchased 36 cabinets. These were arrayed in two columns of 12, plus two side columns of 6.

"Fifteen cabinets for the main columns would have been nice" said Ian. "The simulation pointed to that being the optimum configuration". The system was loosely based on the band rider for the Delirious gig, since that night was the loudest.

"I came up with the system design with the guys from Jands – who have been great",



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Hillsong

10 x 904 gate)  
1 x Lexicon 480L  
2 x Yamaha SPX900

Record FX  
3 x dbx 1046 quad comp  
2 x Yamaha SPX 990  
1 x Klark DN780

Miscellaneous  
1 x 70ch mic kit  
4 x Shure H/held radio mics  
3 x Shure Lapel racio mics  
48ch's Klark DN 1248 active split  
24ch's CA passive split  
10 x Lodestar 1 tonne 75' chain motors  
2 x 1 SOA Powerlok dizzy

**Superdome Main Arena LX**  
Control Equipment  
1 x Whole Hog 2 + wing board  
1 x LSC Focal 120 console  
3 x LSC 48 way dimmers  
6 x Jands HP6 dimmers  
4 x Powerlock 4 way dizzy

Lamps  
34 x 5K fresnel  
6 x 2K fresnel  
15 x 1.2K fresnel  
16 x Pacific 12-28  
8 x Pacific 90  
136 x Par 64 black NSP  
5 x Pallas 4  
8 x Iris 4

Intelligent LX  
16 x Martin Mac600  
12 x Martin Mac2000  
4 x Studio Due City Colour

FX  
2 x F 100 foggers  
2 x oil crackers

Rigging  
436' box truss  
24 x chain motors  
1 x Jands Event 60  
1 x Jands 48 way dimmers  
5 x Jands HP6 dimmers  
1 x LSC E24 dimmers  
3 x MCI 300A dizzy

said Ian. "Bobby Daniels (Jands system chief) is a cool customer, he's looking after the Vertec for us".

"There's a lot happening on stage, so gain before feedback is important. The Vertec enhances very efficient SPL – very little comes back (to the stage), so that people are saying, 'is the PA on?' The only clue is that delightful 700 millisecond slap (echo) from the rear wall, 91 metres away!"

At the less exciting end of the convention are endless numbers (OK, 45) of smaller rooms and meeting spaces. Every one of them needs some kind of PA, and the vast majority have sessions that were recorded to tape.

"We learned about auto reverse decks many conferences ago" jokes David Watson, "when every 28 minutes you'd send a swat team out to turn the tapes over!" As it is, Philby Lewis from Lots of Watts supervised all the systems in all the places, overseeing the usual army of Hillsong volunteers.

The volunteer programme at Hillsong is ongoing, and the convention even had a production stream which attracted up to 200 people to some sessions. Some volunteers have ended up on mainstream production company payrolls, the week before Hillsong Tony Davies at Chameleon was telling me Christian technician training now produced more startup crew that any other source.

Out in the bright light department, freelance LD Ian Anderson was grappling with lighting the audience. "In the SuperDome that's no mean feat. We had 30 5k's in the roof. The reason we do that so it's a more interactive environment, it's not a show as such, more an event for every-

one to be involved in. I did the same down at the Sport's Centre – that whole room was lit in the same way."

Designing a show where the audience is lit is almost unique to TV, which perchance is a big part of the Hillsong Church. It sends cable packages of its church services, conventions and concerts around the world.

"It means I do a lot more lamp wise on stage to get intensity up- it's brightly lit because we are such a television committed church. There needs to be plenty there for the camera, I had to balance to the two back cameras, which were almost 70m away and running extenders in their lenses."

Sydney firm Big Picture Australia did the TV OB at the SuperDome, also supplied the screens and projectors.

"There were five other venues we lit other than the SuperDome. It's a matter of knowing the music and what is going to happen in the services. The songs are easy because we do them in Church" concluded Ian whose staple work diet includes lighting the Pepsi Live show on network 10.

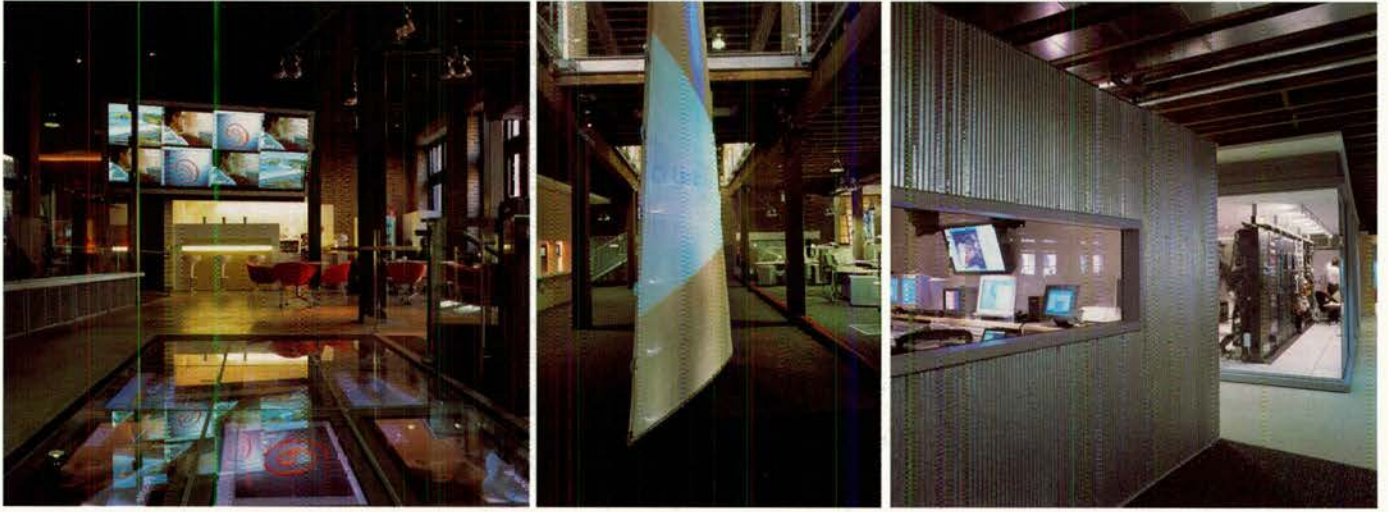
Finally, the whole week was linked together by The PA People who supplied a large matrixed communications system. This entailed landlines between the Sports Centre



(From left) Ian Baldwin, Philby Lewis, Dave Watson, Ian Anderson and Kevin Watts - all looking surprisingly relaxed after five days and four non-stop nights.

JBL Vertec goes up - fast. Hillsong is unique because of large numbers of (well instructed) volunteer crew.





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**State Sports Centre Arena Audio**

1 x Midas XL3 40 mixing console (FOH); 1 x Soundcraft SM12 48 mixing console (Monitors)  
 1 x Mackie CFX 12 mixing console (choir submix)  
 FOH Speaker System  
 5 x EAW KF750 cabinets powered by Crown amps  
 5 x EAW KF755 cabinets powered by Crown amps  
 10 x EV SX300 cabinets + amps (front and gantry fill)  
 8 x double 15" sub cabinets + amps

**Monitor System**

14 x active wedges on 10 sends  
 3 x PSM 600 wireless IEM  
 1 x PSM 600 hardwired JEM

**FOH Drive & FX**

2 x XTA DP226 controllers  
 3 x Klark DN360 EQ's  
 1 x LD606 line driver  
 2 x dbx 1066 stereo comp  
 3 x dbx 1046 quad comps  
 2 x Drawmer DS201 stereo gates  
 1 x Klark DN510 stereo gate  
 1 x Yamaha REV 5  
 1 x Denon DNT620 CD/CASS  
 1 x Denon DN770R dual CASS  
 1 x HHB CD recorder

**Miscellaneous**

1 x 50ch mic kit  
 2 x Shure H/held radio mics  
 1 x Shure Lapel radio mics  
 48ch's CA passive TX split  
 1 x Lodestar 2 tonne 60' chain motor  
 1 x 200A Camlok dizzy

**Sports Centre Main Arena LX Control Equipment**

1 x Jands Hog600  
 1 x Jands Event 60  
 1 x Jands 48 way dimmers  
 5 x Jands HP6 dimmers  
 1 x LSC E24 dimmers  
 3 x MCI 300A dizzy

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 4 x 6-lites  
 12 x 1500w Q1  
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and SuperDome, plus a number of wireless channels.

**MORE TO COME**

While true believers still number in the minority, there is a growing trend towards this style of Church, which is widely viewed as warm and inclusive - as opposed to traditional and old fashioned. Hillsong and churches of its ilk attract a younger crowd, and do a lot of outreach with people who need it. I was amazed to observe over 1,000

happy teenagers at a regular Friday night gathering at the Baulkham Hills facility as I collected some material for this story.

In all my time in this industry (I am 44 years old) I've not seen (until now) a rock band pumping, a lightrig lighting, and 1,000 teenagers unified in purpose without drugs or booze. It is just uncanny, but 1,000 sets of parents rested very well that particular cold Friday night.

So, this is a feel good story. Well done to all who made it happen! •

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**Gain controls** are detented for accurate, identical channel levels setting and are calibrated in volts as well as dB.

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you apply full power. Protect LEDs indicate the amp's internal safety circuits have activated.

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**5 Year Limited Warranty** underscores our confidence in the reliability of FR Series Power Amps. **Constant Directivity Horn EQ** on each channel smoothes the frequency response of CD horn/compression drivers. Not found on the competition amps, CD EQ is variable from 2kHz to 6kHz. At 6 kHz it's also handy for adding openness and "air" to any PA system. **Amp Mode** lets you easily select stereo, mono or bridged operation. **Male & female XLR inputs/outputs** give you easy signal pass-through and double your chances of having the right connector gender. And naturally there are 1/4" TRS inputs, too. **Exclusive Mackie Fast Recovery Design** lets you drive the M-800 M-1400 and M-2600 harder than the competition. Special circuitry and minimal negative feed-

back prevent the amp from "sticking" in a high-distortion state when driven into clipping reducing audible distortion, effectively increasing headroom.

**Switchable limiter** works independently on each channel to gently attenuate the signal level just enough to prevent clipping.

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4-ohm load	275+275W	500+500W	850+850W
8-ohm load	140+140W	300+300W	500+500W

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# ANALOGUE AUDIO MIXERS

This Market Report has been divided into three categories - CONSOLES FOR LIVE PRODUCTION, MIXERS FOR COMMERCIAL INSTALLATION and CONSOLES FOR THE STUDIO.

As always, we asked the distributors to provide the information contained in this report, so there may be some subjective claims here that should be taken 'with a grain of salt'. Prices are list prices, in Australian dollars and include that countries GST (retail tax).

Compiled by Daniel Grafton

## Consoles for Live Production

### Inter-M CMX-842/1242



Inter-M CMX-1242

The CMX-842/1242 are 2 buss mixing consoles with the option of either 8/12/16 balanced mono, XLR microphone and line/insert inputs. The 3-Band equalizer (15dB) features a sweepable mid (250Hz - 5kHz) and the Output section includes Stereo L/R, Mono, 4 Auxiliary sends and 2 Stereo returns with flexible level control. Monitoring options include Headphone, Monitor Out (with Level Control). Other features: Tape-In and REC Out (with Level Control); 10-segment level display for metering on L/R, Mono/PFL and AFL (selectable); and selectable 48V Phantom Power. A rack mount kit is optional.

Inter-M is a large Korean pro-audio company, previously known as "Inkel" until 1996. Large installations in the contract and pro-audio markets have established Inter-M as a quality high performance brand. Inter-M maintain a pro-active R&D unit and deploy precision componentry in all products.

- CMX-842 \$900 / CMX-1242 \$1400
- Magna Systems +61 2 9417 1111

### Inter-M CMX-1664/2464



Inter-M CMX-1664

Designed for either recording or live mixing, the CMX-1664/2464 series provides low noise and high fidelity audio.

Available with either 16 or 24 mono input channels with an additional 4 stereo input channels. Each input has 6 Auxiliary Sends (1&2 Pre, 3&4 Post and 5&6 selectable). Also included: 3-Band EQ (15dB) with variable mid-range frequency sweep (250Hz - 5kHz), High Pass filter (12dB/octave), 4 stereo auxiliary returns with assign switches and Group/Auxiliary/Stereo assign switches.

The Inter-M CMX consoles use high-precision 100mm faders, discrete balanced microphone inputs (+48V phantom power), Talkback function with assign switches, Tape-In and REC-Out, Group/Stereo Sub Input, Group/Stereo Insert I/O jacks, 10-segment level meter. BNC sockets allow the connection of desk lamps.

- CMX-1664 \$3000 / CMX-2464 \$4000
- Magna Systems +61 2 9417 1111

### Midas Venice 160

A rack-mount mixing console with swivel connector panel. Eight mono input channels plus four stereo channels that will accept stereo line or mono microphone level plus four stereo line returns. Six auxiliaries with two standard as post, two as pre- and two switchable (other assigns available on request). These consoles also feature 4 subgroups, stereo out & stereo submaster out.

Venice consoles include legendary Midas microphone pre-amps and equalisation and produce superb sonic performance. The Venice 240, 16 Mono/4 and the Venice 320 24 Mono/4 are also available.

- Venice 160 \$5,495
- Venice 240 \$7,495
- Venice 320 \$9,495
- EVI Audio Australia +61 2 9648 3455

### Midas Legend 3000

Available in various frame sizes from 24 to 48 inputs. VCA console with Automation, twelve auxiliaries, 8 groups, 6 matrix, four stereos. Versatile design for either FOH or F/Back with split EQ path separate faders for FOH and MON plus full EQ on each Aux out. Ambience microphone input with mix to each Aux. Standard Midas Microphone Pre-amp and EQ plus an extra two Parametric bands assigned to the monitor path.

- From \$49000
- EVI Audio Australia +61 2 9648 3455

### Midas Heritage 1000

Fully modular console from 24 to 64 inputs. VCA console with automation, ten auxiliaries, ten groups, ten VCA masters, eight matrix outputs. Versatile design capable of either FOH or foldback applications, compact design available in touring flightcase with redundant power supplies. Legendary Heritage Microphone Preamps and EQ; Group, VCA, Mute, Aux assigns under automation plus VCA fader automation on VCA masters.

- Midas Heritage 1000 \$76k (24 i/p)
- EVI Audio Australia +61 2 9648 3455

### Midas Heritage 2000

Fully modular console from 24 to 64 inputs. VCA console with automation, twelve auxiliaries, twelve groups, eight matrix, ten VCA masters. Versatile design capable of either FOH or foldback applications. Available in touring flightcase with redundant power supplies. Legendary Heritage Microphone Preamps and EQ. VCA and Mute assign under automation. Full VCA fader automation available on all input faders and VCA masters faders.

- Midas Heritage 2000 From \$100k (24 i/p)
- EVI Audio Australia +61 2 9648 3455

### Panasonic RAMSA WR-S4400A

The Ramsa WR-S4400A 4-Buss series includes 12

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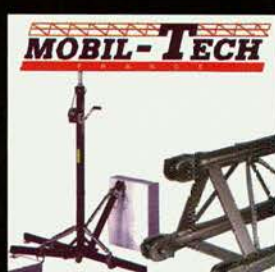
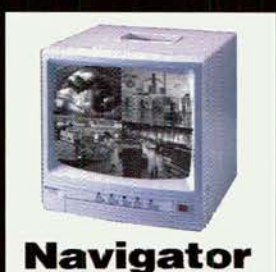
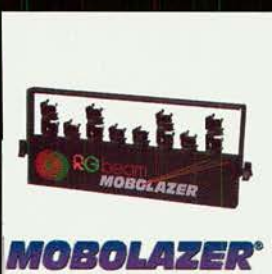
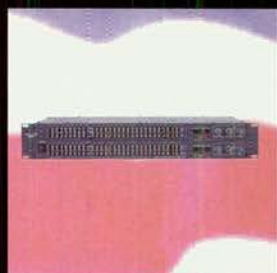
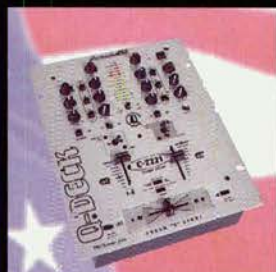
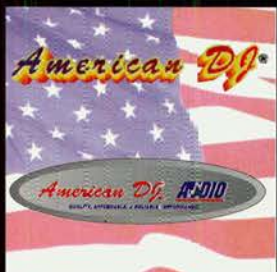
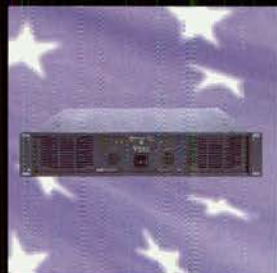
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## Consoles for Live Production



Allen & Heath ML Series

& 16 channel mixers with a host of professional features that are laid out in an intelligent & intuitive way. The WR-S4400A offers many sophisticated options including: Professional length 100mm faders for precise mixing control; 2 inputs per ch (A and B selectable)

that greatly increase mixing power, and a flexible 3-Band EQ. In addition, low noise & low distortion have been achieved after extensive field testing.

- 12ch \$3298
- 16ch \$4145
- Ramsa
- +61 2 9477 7377

### Ramsa WR-SX1

Designed for dependability on big events, the SX1 incorporates the superb grounding capabilities of the WR-S840 recognised in professional audio circles. The SX1 console has increased discrete circuitry and a reduction in the number of operational

amplifiers which produces clarity, flexibility and the reliability demanded by touring professionals.

Features include: lower ground impedance; a new aluminum earth reference frame and moveable summing copper bar that produces a clearer, richer sound; streamlined built-in amp stages that reduce sound distortion and finally a new improved power supply boasts powerful low threshold sensitivity.

These are ex-Olympic consoles at a never to be repeated price.

- WR-SX1 \$52,800
- Ramsa +61 2 9477 7377

### ARX MIX 8

An 8 channel stereo line mixer with individual Level and Pan

controls, Balanced XLR and jack inputs, plus RCA (phono) inputs. Balanced XLR outputs, Headphone Out, Master level controls. Neat, compact and useful.

- \$841
- ARX Systems +61 3 9555 7859

### ARX MaxMIX

MaxMIX is ideal for zoning, extra returns or installation systems. An 8-way line mixer it is switchable to 4 into 2, 8 into 1 with individual level controls, Balanced XLR ins and outs.

- \$705
- ARX Systems +61 3 9555 7859

### ARX DI-6s

A neat package combining six active DI boxes and a 6-into-one line mixer - all at the same time! But wait, there's more - press a switch on the back and it's a 1 to 6 line splitter. A truly unique product - every rack should have one.

- \$858
- ARX Systems +61 3 9555 7859

### Soundcraft Spirit M **HOT SELLER**

The new Spirit M Series - Utility consoles with a big feature set! The Spirit M Series is available in 4, 8 or 12 mono input channel frame sizes and all include four full feature stereo inputs, four stereo returns, 4 auxiliary busses and direct outputs on all mono channels. The M Series consoles also feature the microphone preamps and 3-Band sweepable EQ derived from the legendary Soundcraft Ghost console.

The Power supply is mounted in the "foot" of the console, providing the necessary shielding and convenience of no external PSUs. In addition, a SPDIF digital output is provided for feeding digital devices such as HD recorders and PCI audio cards. Rack mounting included as standard.

- \$1795
- Jands Electronics + 61 2 9582 0909

### Soundcraft Spirit FX Series

A compact utility console featuring 8 or 16 Mono mic/line inputs w/Ultramic pre-amps, 3-Band sweepable mid EQ and HPF; 4 Aux with internal Lexicon dual FX processor, 4 Stereo Returns and 2 sub-groups. The connector panel can be rotated to the back of mixer for rack mounting. Available in 8 & 16 channel versions.

- \$1795
- Jands Electronics + 61 2 9582 0909

### Soundcraft Series Two

Series Two is a classic 8-group, 8-Aux format console with such features as sweepable high-pass filters on every input, high-resolution LED input metering, and midi-controlled snapshot muting. Outputs are augmented by left, right and centre busses, plus an 11x2 Matrix section, as well as the 8 Aux and 8 group outputs. Available in 24, 32 and 40 channel frame sizes.

- \$15995
- Jands Electronics + 61 2 9582 0909

### Soundcraft Series Five

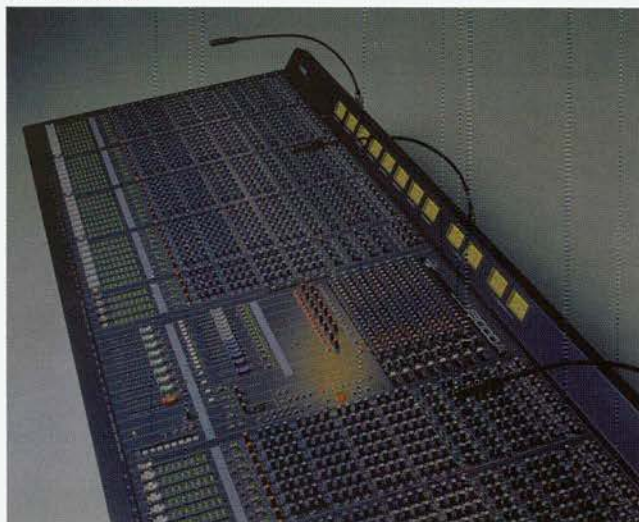
Representing the cream of live sound production consoles, the Series 5 is setting new trends internationally. Features include A/B inputs on all channels, variable LPF and HPF filters, 4-Band fully parametric EQ, 12 Aux. sends and true LCR panning. Output features include 8 sub groups, 10 VCA groups and a 16 x 10 matrix. Far too many features to mention here. Call Jands for a demo. Available in 28, 36, 44, 52 and 60 channel frame sizes. Also available, Series 5 monitor in either 24 or 32 buss versions.

- From \$60,000. Contact Jands for specifics
- Jands Electronics + 61 2 9582 0909

### Allen & Heath GL2200 Series

FOH/Foldback/Dual Role Mixer with 12, 16, 24 or 32 inputs, 4 sub-groups, left/right/mono

Yamaha M3000



Soundcraft Spirit M



Soundcraft Series Two



puts, 6 auxiliary sends, 4-Band EQ with 2 mid-sweeps, 100mm faders, individual phantom, tone/pink noise generator, 'Road Warrior' construction with individual channel PCB's and each pot securely fastened to the mixer face.

- \$4,595
- Technical Audio Group + 61 2 9810 5300

**Allen & Heath GL3300 Series**

FOH/Dual/Dual Role Mixer with 16, 24, 32, or 40 inputs with all mono or 4 or 8 stereo channels, 8 sub-groups, left/right/mono outputs, 8auxiliary sends, 4 mute groups, 4 -Band EQ with 2 sweeps, 100mm faders, 2 stereo returns, 10x2 matrix, individual channel, 'Road Warrior' construction with individual channel PCB's and each pot securely fastened to the mixer face.

- \$8,995
- Technical Audio Group + 61 2 9810 5300

**Allen & Heath GL4000 Series**

An Entech Award Winning FOH/Dual/Dual Role Mixer with 24, 32, 40 or 48 inputs with all mono or 4 or 8 stereo channels, 8 sub-groups, left/right/mono outputs, 10 auxiliary sends on faders, 4-Band full sweep EQ with 'Q' control on mids, 10x4 matrix, 8 mute groups plus 128 Midi scenes, 8 track recording facility, 'Road Warrior' construction with individual channel PCB's and each pot securely fastened to the mixer face.

- \$21,995
- Technical Audio Group + 61 2 9810 5300

**Allen & Heath ML Series**

FOH/Dual/Dual Role Mixer with 24, 32 or 40 mono inputs plus 4 stereo +2 for ML4000) with optional 24 channel expanders (max 102 channels), 8 VCA groups with scene automation, 8 audio groups, 16 aux (12 for ML4000) with aux 9-12 optionally paired for stereo IEM feeds, enhanced LCR with unique two pot positioning, 8-way matrix, 4 -Band parametric EQ with sweepable (switchable on ML4000) 'Q' on the mids and in/out switching.

- \$42,995
- Technical Audio Group + 61 2 9810 5300

**Yamaha MX12/6, 20/6**

The updated MX series mixers offer a level of features and ease of use rarely seen. With eight (MX12/6) or 16 (MX20/6) microphone inputs plus 2 stereo inputs, the new MX models are ideal for small to medium sized gigs or corporate work. 4-buss plus stereo outputs are all available as separate outputs. An upgraded effects section includes 16 digital effects.

- MX12/6 \$1,195
- MX20/6 \$1,595
- Yamaha Music Australia +61 3 9693 5111

**Yamaha GA24/12, 32/12**

24 or 32 channel universal FOH & Monitor mixers featuring 12 buss (10 mix + stereo). Mix busses can be configured as 6 aux + 4 group + stereo or 10 aux + stereo, or anywhere in between. Channels feature 4 -Band PEQ with twin mid-sweep, HPF,

PFL etc, and all mix busses have 3-Band EQ with mid sweep and AFL.

- GA24/12 \$5,395
- GA32/12 \$6,395
- Yamaha Music Australia +61 3 9693 5111

**Yamaha M3000-24, 40C, 56C**

24, 40 or 56 channel universal FOH & Monitor mixers featuring 8 Vice's plus 18 busses (12 mono mix + 2 stereo mix + main stereo) that can be configured from 8 aux. + 8 group + stereo through to 16 aux. + stereo. Master 20 • 8 mix matrix, VU meters and 128 MIDI controllable mute 'scenes' make the M3000 a truly professional desk suited to concert, theatre, worship and broadcast applications.

- \$23,995 (24)
- \$33,495 (40C),
- Yamaha Music Australia +61 3 9693 5111

**Crest XR20**

12 Mono inputs + 4 Stereo inputs (20 inputs total), all with microphone preamps and individual 48 Volt Phantom. 100mm faders on all inputs and Left, Right, and Mono. 60mm faders on the 4 sub-groups. Four band (two mid sweeps) EQ on all inputs. 18db per octave high pass filters on mono input channels. Insert on all inputs, subgroups, aux outs and L, R & M outputs. 6 Aux buses, selectable pre or post fader in pairs. Auxiliaries 1 and 2 can be configured as Level/pan for stereo operation. XLR L, R & Mono outputs

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SA: Tel (08) 8352 4444 Fax (08) 8352 4488 NZ: Tel (09) 415 9426 Fax (09) 415 9864 www.audiotelex.com.au

*Consoles for Live Production*



Crest V12

outswitchable between Line and Microphone level.

- \$5,778
- Production Audio Services +61 3 9415 1585

**Crest X8HS**

4-Band EQ (sweep mids) and high-pass filters on all inputs. Fader-reverse function for FOH/Mon mix. Direct output on all mono input channels. 5-segment led on mono inputs. 8 aux mixes, with auxiliaries 5/6 and 7/8 switchable to stereo. Discrete buss assignment true LCR panning. Separate ground-compensated insert sends and balanced returns on group, auxiliary and primary outputs also on mono input-channels. Fully balanced primary outputs and balanced microphone and line inputs. Meter bridge as standard.

- \$28,356 (24)
- \$45,895 (48)
- Production Audio Services +61 3 9415 1585



Sony SRP-V110



Sony SRP-X351P

**Crest X-VCA**

8 VCA-masters control input and group channels. VCA assignment may be stored via the microprocessor control system. 4-Band EQ and variable high-pass filter on input channels. Mono inputs have full-parametric EQ, while stereo inputs are sweepable in all 4 bands. 8-channels of dynamics include variable-ratio Compressor/Limiter and Downward Expander (gate). Output EQ and RMS-limiters on primary stereo and mono outputs. Multiple outputs, including Alternate Output, Matrix 1-4 (option for additional external matrix outputs) and dedicated assistive listening outputs. Direct-output on all mono input channels.

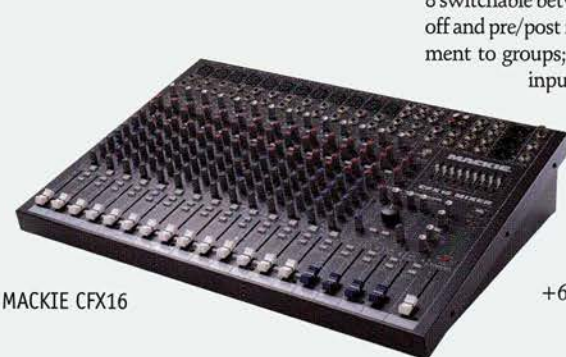
- 5-segment level indication on all mono input modules.
- \$45,995 (24)
- \$74,352 (48)
- Production Audio Services +61 3 9415 1585

**Crest V12**

Front-of-house console with secondary-applications as a full-facility monitor desk capable of generating up to 28 monitor-mixes. 4-Band full-parametric EQ on all input modules; switchable HF/LF frequency bands (bell- and shelving-curves); sweepable 18db high-pass filters on both mono and stereo input modules.

Other features: 12 VCA masters; 16 aux mixes, with 8 switchable between mono and stereo operation, on/off and pre/post fader switching; Discrete buss assignment to groups; gold-plated connectors on balanced inputs and outputs; Fully-balanced internal bussing; True LCR panning; Output meter bridge (standard) and Group swap-controls to re-map group/aux/matrix operations.

- From \$100k
- Production Audio Services +61 3 9415 1585



MACKIE CFX16



SoundTech 1602

**Sony SRP-V110**

This is a compact rack-mountable (rack kit optional) audio mixer offering superb sound quality and designed for sound reinforcement, A/V installations and for live video production. The SRP-V110 is an 8 buss design, offering 10 XLR balanced microphone inputs, 8 stereo line inputs and an 8 track tape input section. Each of the first ten channels and the first four stereo channels is equipped with a 3-Band, mid-sweep EQ, 9 auxiliary sends (including a stereo pair that works in conjunction with tape the inputs), channel on/off, a PFL button and buss 1-8 + L/R assign buttons.

- \$3,490
- Sony Australia +61 2 9887 6666

**Sony SRP-X351P HOT SELLER**

An integrated audio/video mixer power-amplifier, designed to provide the ultimate in cost-effective flexibility for a wide range of A/V applications, including board-rooms, conference rooms, sports bars, churches and presentations. It incorporates powerful features, providing all the key elements of a good presentation system and bringing it all together in a rugged compact design. Providing four microphone and three line inputs with 125W per channel, a video switcher and wireless microphone receiver, the SRP-X351P should fit into almost any system configuration and budget. The SRP-X351P has been a hot-seller with Universities integrated A/V with Sony's popular LCD projectors.

- \$2,190
- Sony Australia +61 2 9887 6666

**SoundTech**

The SoundTech USA Quantum Mix Series Mixers offer an incredible number of features in a straightforward layout. The ST1202 offers 4 mic/line & 4 stereo line channels whilst the ST1602 offers 8 mic/line and 4 stereo line channels. Ideal for schools, churches and small bands the SoundTech Quantum Series offer exceptional value for money.

Both the ST1202 and ST1602 feature 3-Band EQ with mid sweep, 3 Aux Sends (1 pre-, 1 post, 1 switchable), Solo per channel, B Mix Routing, Control Room Output, Channel Insert Points, Stereo Aux Returns, Excellent Metering Facilities, Mute per channel, Smooth 60mm faders, Balanced and unbalanced outputs and Phantom Power (+48V).

- ST1202 \$999 / ST1602 \$1299
- Audio Telex + 61 2 9647 1411

**MACKIE CFX12 \$1995 RRP**

12x4x1 configuration, 8 mic/line channels with 3-Band EQ with swept mids, 2 stereo line channels with 4-Band fixed EQ, 4 buss, 2 Aux sends with Pre/Post Switch, 2 FX sends, 32-bit EMAC\_ digital effects, 9-Band stereo graphic EQ, 60mm logarithmic faders

CFX Series are professional 4 buss mixers with built-in 32-bit effects and audiophile-quality graphic equalisers and more features than any mixer in their class.

- \$1995
- Australian Audio Supplies + 6 2 4388 4666

**MACKIE CFX16**

16x4x1 configuration, 12 mic/line channels with 3-Band EQ with swept mids, 2 stereo line channels with 4-Band fixed EQ, 4 buss, 2 Aux sends with Pre/Post Switch, 2 FX sends, 32-bit EMAC digital effects, 9-Band stereo graphic EQ, 60mm logarithmic faders

- \$2595
- Australian Audio Supplies + 6 2 4388 4666

# Professional 16 Channel Wireless Microphone System **REDBACK**

This new "state of the art" **REDBACK** 16 Channel Wireless Microphone System allows you to use up to 6 systems in the same location without interference!

### Features:

- 790 - 806MHz UHF frequency range operation
- 16 preset channels available
- Use up to 6 separate systems in one location\*
- Wireless operation
- Hand held, lavalier, guitar, lecture and aerobic head worn mic transmitters available
- Tone squelch circuit for noise free operation
- Operates up to 200m in ideal conditions
- 3 pin XLR balanced & 6.35mm unbalanced output (6.35mm to 6.35mm lead included)
- 12V DC operation (AC/DC Adaptor included)
- Front mounted volume & channel selector
- LED indicators for active channel & power
- Desk or Rack mount (ideal for hire companies)
- Half rack, 1RU size (two units mount in 1RU)
- Optional single rack mounting kit available
- Rear mounted antennae with TNC connectors (can be remote mounted if desired)
- 12 months warranty

The Redback C 8870 utilises the latest PLL synthesized technology, delivering crisp, clear, interference free reproduction. Don't be concerned about frequency congestion again, the Redback C 8870 offers 16 different channels at the flick of a switch.

The unique modular design allows two receivers to be ganged together to fit into a standard 1RU rack space.

The belt pack transmitters are very versatile, with the ability to be coupled with a lightweight lecture mic, robust aerobics head worn mic or with the traditional lavalier (tie clip) mic for guest speaking. A guitar transmitter (fitted with a 6.5mm jack) is also available.

In our opinion we believe it is the best value for money wireless system on the market. But don't take our word for it.

Try it for yourself with our peace of mind **14 DAY MONEY BACK GUARANTEE!**

\*Must be returned in original condition with packaging.

**Channel selection is easy as 1,2,3,4.**

**INTRODUCTORY OFFER**  
The first 50 orders placed this month include a **BONUS** high impact heavy duty carry case, **FREE!** Valued at \$49.00

**SYSTEMS START FROM JUST RRP \$799** (Receiver & Transmitter)

Lightweight Lecture Mic

Hand Held Mic

Robust Aerobics Mic

Belt Pack Transmitter & Lavalier Mic

Belt Pack Transmitter & Guitar Lead



The modular design allows two units to be coupled together with this easy to install bracket. (included)

Connecting to your amplifier is easy, just choose your output socket...

Channel selection is a breeze with the simple dip switch, it's as easy as 1,2,3,4.

Hand Held Selector

Belt Pack Selector

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USA-1250  
USA-1300  
USA-1600



A close encounter of the affordable kind.

*Mixers for Commercial Installation*



Audio Telex  
TX6000  
TX8000  
TX8201

**MACKIE SR24?4**

24x4x1, 20 mic/line channels with studio-grade XDR preamps, 2 stereo line channels, 4 buss subgroups, Solo/Pan and 16KHz EQ on each submaster, 6 Aux sends, 4 stereo Aux returns with EFX Monitor, 3-Band EQ with swept mids on microphone channels, double-buss sub outs, Separate talkback section with extra microphone preamp, 60mm logarithmic faders, Phantom power, built-in power supply.

Mackie designed the SR Series to be the best value 4-Buss, live sound mixers ever offered. This second generation now includes XDR preamps.

- \$4295

- Australian Audio Supplies + 6 2 4388 4666

**MACKIE SR32?4**

32x4x1, 28 mic/line channels with studio-grade XDR preamps, 2 stereo line channels, 4-buss subgroups, Solo/Pan and 16KHz Air EQ on each submaster, 6 Aux sends, 4 stereo Aux returns with EFX Monitor, 3-Band EQ with swept mids on microphone channels, double-bussed sub outs, Separate talkback section with extra microphone preamp, 60mm logarithmic faders, Phantom power, built-in power supply.

- \$5495
- Australian Audio Supplies + 6 2 4388 4666

**Mixers For Commercial Installation**

**ARX MIXX**

MIXX is a 4 channel microphone preamp and mixer with 3 way EQ, Balanced Mic/Line Inputs, direct outs, 48V Phantom power. 'Open Buss' system links with MIXXMaster.

- \$933
- ARX Systems +61 3 9555 7859

**ARX MIXXMaster**

A 2 channel mic/line plus 2 stereo line master mixer, MIXXMaster features EQ, Balanced Mic/Line inputs, direct outs, 48V Phantom power, Master output controls. 'Open Buss' system links multiple MIXX and MIXXMaster units.

- \$773
- ARX Systems +61 3 9555 7859

**ARX BarMIX**

BarMIX is a Multimedia Zoner/Mixer that can distribute microphone and four stereo signals to two separate zones. Includes a comprehensive microphone EQ plus override ducker, local and optional remote zone level controls, separate zone EQ and metering and multiple XLR outputs. A deceptively simple yet flexible unit that provides superb sound.

- \$981
- ARX Systems +61 3 9555 7859

**Audio Telex TX6000**

The TX6000 features 6 balanced, dual microphone (XLR)/line (RCA) inputs, common bass & treble EQ and master gain control, balanced output (XLR), tape recorder output, phantom power on all microphone inputs and AC/DC operation. A compact 1 RU high, rack mountable or self standing unit, the TX6000 has two optional plug-in muting modules; the TX3010 which automatically mutes all other channels, from channel 1 or, the TX3014 which mutes inputs 2 to 6 from channel 1 and 3 to 6 from channel 2.

Excellent for general public address applications where the system needs to be user friendly.

- TX6000 \$496
- Audio Telex + 61 2 9647 1411

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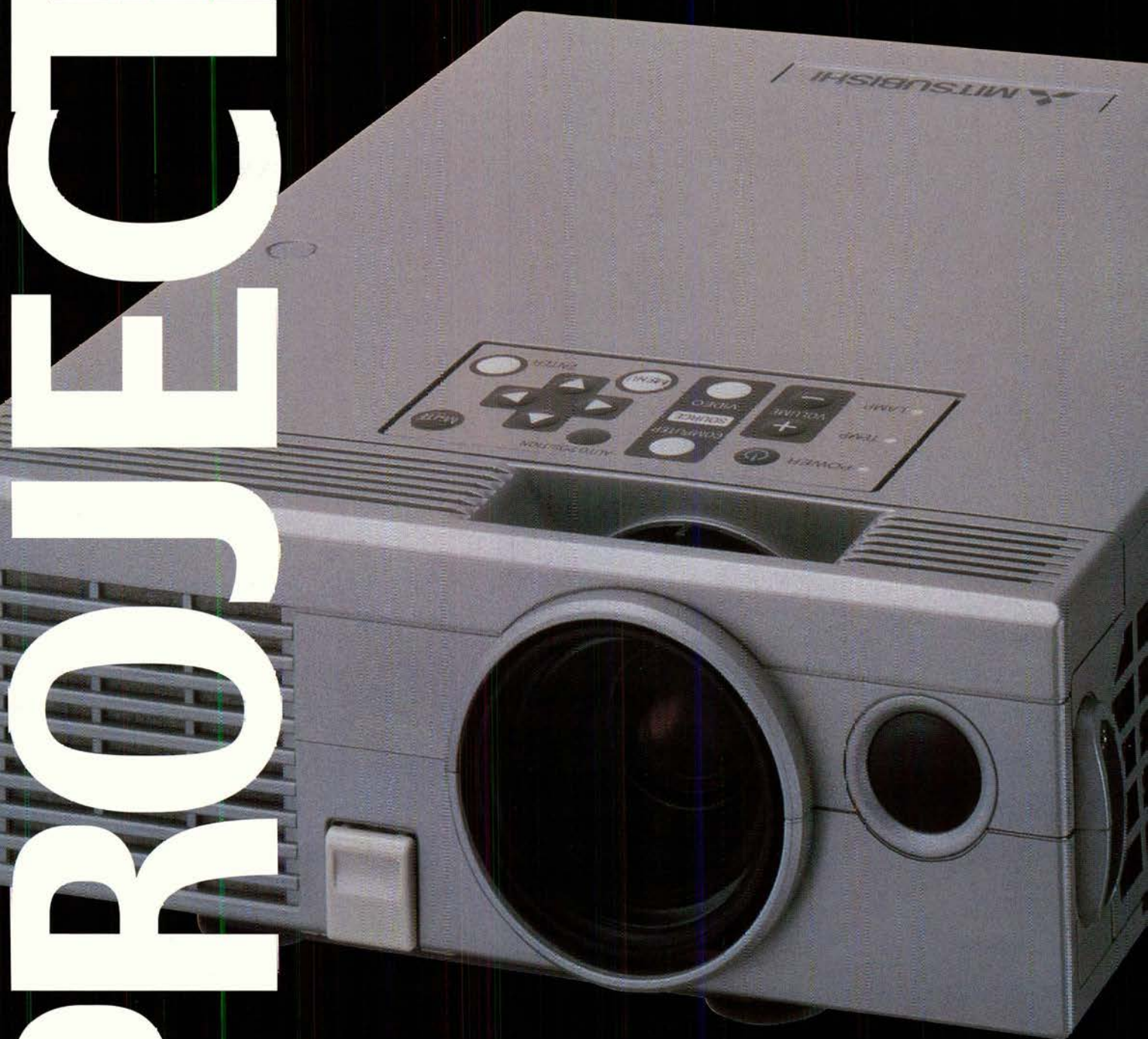
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# PROJECTOR MAGAZINE

AUGUST - SEPT 2001

**PORTABLES:**  
*Full Market Report,  
Specifications & Prices*



A **Connections** pull out

## WHAT'S THIS?

Loyal readers recall PRESENTECH, our year long attempt at a spin off magazine. It looked nice, was popular, but it failed.

Along the way we learned, gathered information and readers, and then went through a kind of internal rebirth at Connections Publishing. Many brilliant people left, along with some total dunderheads. Publishing is like that. You choose!

Armed with new insight, new motivation, some troublesome new Apple Macs and almost a fresh new staff, we redesigned and reinvigorated Connections. The old editor was put out to pasture, as he had recently celebrated - if that is the right term - ten delirious years as Editor. OK, 8 of them at Connections, and 2 at Channels before that. Lucky he is an owner, so he is now Publisher-In-Chief, and remains gainfully employed.

New editor John Grimshaw has settled into the hot seat and is now on first name terms with our defamation specialist at Gilbert & Tobin.

So the time has come for yet more improvement, and here it is: Projector Magazine.

We figured that most of the AV market is about images, mainly projected but also (of course) on display devices, like Plasma. So this is our bi-monthly product driven magazine for the professional display device market. We've made it a pullout, so we can send several thousand extra copies to outlets and education facilities. And you can keep it handy!

### COMING UP:

**OCTOBER:** Featuring Plasma price guide; plus Control Systems.

**DECEMBER:** Live Vision Mixers; plus Large Venue Projectors.

### Inside this issue...

We have gone to all of the major distributors of video projectors, and asked them to supply us with information about the projectors they promote. This report is the result of those enquires. All companies were asked to supply information on up to four projectors in two categories - **Ultra-Portable Projectors** (weight under 5kg) and **Portable Projectors** (weight 5-15kg).

As the distributors provided the information contained in this report, there may be some subjective claims here that should be taken 'with a grain of salt'. All prices are the 'retail list price', and are shown in Australian dollars including GST (a local retail tax that adds 10 percent). NZ and Asian readers can compute price differences for those markets. *Two distributors did not respond to the call for information, and their brands (3M and Eiki) are not represented here.*

## Brands in this Market Report

Brand	Distributor	Sales Enquiries	Website
Acer	Acer Communications & Multimedia	+61 2 8762 3350	www.acercm.com.au
Canon	Canon Australia Pty Ltd	+61 2 9805 2000	www.canon.com.au
Elmo	CR Kennedy Pty Ltd	+61 3 9823 1541	www.crkenedy.com.au
Epson	Epson Australia Pty Ltd	+61 2 9903 9000	www.epson.com.au
Fujitsu	Fujitsu General (Aust) Pty Ltd	+61 2 8822 2500	www.fujitsugeneral.com.au
Hitachi	Hitachi Australia Ltd	1800 789 799	www.hitachi.com.au
Infocus	Electroboard Pty Ltd	+61 2 9433 4444	www.electroboard.com.au
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ISBN: 1320-5595

**PROJECTOR** is published by  
CONNECTIONS PUBLISHING PTY  
LTD

Australian Company number 058 443 182  
ABN 66 058 443 182

**Mail:** PO BOX 439, EPPING  
NSW 2121 AUSTRALIA.

**Deliveries:** 16 Willoughby street.

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**Fax:** +61 2 9876-5715

**Hours:** 0900 - 1700 Sydney.  
After hours try any of the mobile  
numbers below, email, or fax.

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**Deadlines:** Sept 1st for OCTOBER,  
November 1st for DECEMBER.

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**Printed in Sydney by:** Superfine

**Reprographics:** Omicron.

**IT consultant:** Brendan King

**Platform:** Apple Mac.

**Advertising production & art:**

Sage Art Production & Design.

+61 2 9981-2891 or email

smiceli@one.net.au

ISSN 1320-5595



9 771320 559004

A Connections Publication

**Connections**

# PORTABLE PROJECTORS

## ULTR-PORTABLES (Under 5Kg)

### Acer Palmpro

This is a series of five projectors all weighing 2.3kg and using DLP technology. The series consists of the Palmpro 7763PS (800 ANSI, fixed lens, SVGA), Palmpro 7763P (800 ANSI, zoom lens, SVGA), Palmpro 7763PA (1100 ANSI, zoom lens, SVGA), Palmpro 7763PE (800 ANSI, zoom lens, XGA), Palmpro 7763PA (1100 ANSI, zoom lens, XGA). The Acer Palmpro Projector series provides flexibility and value for money. With up to 1100 lumens in both XGA and SVGA resolution, DLP technology and weighing just 2.3kg's, the Palmpro Projector series delivers crisp, clear and colourful images.

- From \$4,999 to \$8,499

### Acer SL700X

1.4kg, DLP, 1000 lumens, DVI input, XGA resolution. The Acer SL Projector delivers exceptional picture quality in truly an ultra portable package. With an amazing 1000 lumen output, DLP technology, and weighing an incredible 1.4kg, this pocket sized projector enables the user to take their bright digital images anywhere. Other features such as a throw ratio of 60" at just 2 metres, digital keystone correction, DVI input and easy 1-2-3 set up, the Acer SL700X is the projector you can use at work and take home for play.

- \$8,999

### Acer VP110X

1400 lumens, 3.6kg, LCD, XGA resolution. The Acer VP110X Projector is a high power presentation projector that gives visual communication an additional dimension. With high brightness, combined with dynamic features such as the optional ODC (Objective Display Camera), the Acer VP110X is the ultimate multifunctional tool for business – going beyond two dimensional to high impact three dimensional images.

- \$9,499

### Canon LV-5100

When you are conducting presentations on the go and need portability without compromising quality the LV-5100 is the perfect choice. Ultra light at 2.7Kg and a beaming 700 Ansi lumens you can take this projector everywhere. Native SVGA resolution but with compressed XGA and SXGA capabilities, projection is even and bright with no image washout and the remote control is one of the easiest to use. Smart features include: superior Canon optics, 700 Ansi lumens, 90% uniformed brightness, manual zoom and focus, soft carry case, 15% digital keystone correction, fan noise 39dBA, 2.58Kg 189 (w) x 75.5(h) x 310 (d).

- \$5,445

### Canon LV-7105

The LV-7105 is the projectors for all season. Connects to your laptop, digital camcorder or DVD; the LV-7105 can handle it all. Thanks to the LV-7105's easy operation, you will be able to deliver a presentation without skipping a beat. The LV-7105 delivers high performance to both the boardroom and the classroom. Native XGA resolution gives powerful computer presentations and quite operations means your audience is undisturbed. Smart features include: superior Canon optics, 800 Ansi lumens, 90% uniformed brightness, manual zoom, and focus, 15% digital keystone correction, fan noise 39dBA, 2.58Kg, soft carry case, 189 (w) x 75.5(h) x 310 (d).

- \$7,254

### ELMO EDP-S10

The EDP-S10 is a take-anywhere LCD data projector for great presentations in any size room. It has an extremely short throw distance and very low noise operation. Rated at 800ANSI Lumens the unit uses 3x0.7" LCD chips at SVGA native resolution, and is capable of displaying numerous input signal types. The unit comes with a soft carry case.

- \$4,495

### Elmo EDP-X20

The EDP-X20 is an XGA native resolution LCD data projector. Display optics allow for a slightly longer throw than the S10. With very low noise operation, the unit is rated at 1100ANSI Lumens and uses 3x0.9" LCD chips at XGA native resolution. This device is capable of displaying numerous input signal types. The unit comes with a soft carry case.

- \$6,995

### Epson EMP – 50

The EPSON EMP-50 is an SVGA projector suitable for use in the classroom, office or home. The EMP-50 is a lightweight, high bright 1000 ANSI compact projector suitable for the mobile presenter and home entertainment enthusiast. It provides maximum portability without sacrificing advanced features and brightness. The EMP-50 is a versatile projector and has been built for various digital functions. Digital Active Resizing allows the projector to support signals from VGA to SXGA, and it is also compatible with DVD and HDTV. Electronic keystone correction ensures the user can achieve a square image on the screen. Digital Image Scaling, known as "Telewide", electronically adjusts the screen size. Electronic zoom allows the images on the screen to be enlarged. Added to this is a 1W built-in speaker, remote control with pre-programmed special effects help function and easy to follow on screen menu and connectivity for both PC and video.

- \$5,990

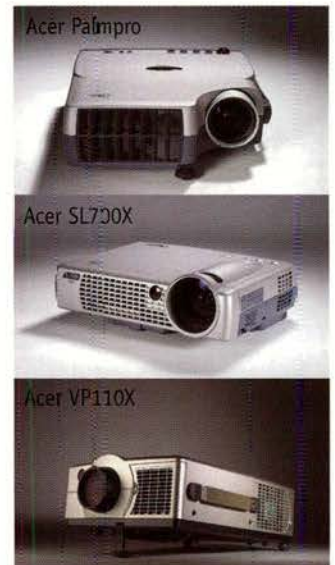
### Epson EMP – 505

The EPSON EMP-505 is an ultra-portable projector supporting true SVGA resolution. Coupled with EPSON's Digital Active Resizing (DAR) Technology the EMP-505 can achieve high quality VGA, XGA, and SXGA resolutions. The EMP-505 allows PC-free presentations through the PCMCIA card slot, which enables users to save presentations onto the PCMCIA card. This function, 'E@syMP', enables the projector to be used in stand-alone presentation mode meaning less baggage and less time spent searching for presentations on your laptop! E@syMP allows presentations to be saved in JPEG format using EMP Slidemaker software and different presentations can be saved on different PCMCIA cards. The EMP-505 reduces the baggage weight for the professional presenter without reducing the impact of their presentation. Brightness is a high 1100 ANSI lumens, which is achieved with a new 150W UHE lamp, providing bright, clear images in almost any environment. Component video and HDTV compatibility have been added, further improving the quality of the video image.

- \$7,500

### Epson EMP – 70

The EPSON EMP-70 is an XGA projector suitable for use in the classroom, office or home. The EMP-70 offers a true XGA (1024 x 768) resolution, but is also capable of supporting VGA, SVGA and SXGA. The resolution is achieved via 3 x 0.7" LCD "DREAM" panels; this 3-panel



**Ultra-Portables (under 5kg)**

Epson EMP - 715



display technology produces clearly defined images and also allows for a small compact projector. The EMP-70 has been built for various digital functions. Digital Active Resizing allows the projector to support signals from VGA to SXGA, and it is also compatible with DVD and HDTV. All these features help to ensure you get the most out of your projector regardless of your needs.

- \$7,200

**Epson EMP - 715**

The EMP-715 is an ultra-portable projector supporting true XGA resolution. Coupled with Epson's Digital Active Resizing (DAR) Technology the EMP-715 can achieve high quality VGA, SVGA, XGA, SXGA and UXGA resolutions. Brightness is a stunning 1200 ANSI lumens, achieved by introducing a newly developed short arc 150W UHE lamp enabling this lightweight projector to produce bright clear images in almost any environment. Composite and S-Video inputs and HDTV compatibility are supported, further improving the quality of video images. Again equipped with Epson's new E@syMP function, enables the projector to be used in stand-alone presentation mode. The EMP-715 reduces the baggage weight for the professional presenter without reducing the impact of their presentation.

- \$9,990

**Fujitsu SHOWMAN LPF4800**

Fujitsu General (Aust.) Pty. Has released its latest ultra-portable LCD projector, the Light Weight SHOWMAN LPF 4800. This model delivers brightness of 1,500 lumens (ANSI), and casts true pin sharp XGA 1024 x 768 images. Fujitsu General used three 0.9 inch LCD panel and 150W EHP lamp produce one of the brightest projector in the market. The projector has a throw distance from 1.1 to 10m, and has a projection screen size from 23 to 249 inches. Users can choose from a wide range of functions that the LPF 4800 offers. Employing the digital keystone correction function, users can easily correct trapezoid distortion. Users can enlarge a projected image with the digital zoom function. The LPF 4800 accommodates formats such as DVD and HDTV 1080i. The compact design of the projector is 40% less compared with the conventional models. The LPF 4800 measures 27.5 x 8.9 x 23.5cm, weight 3.6KG.

- \$8,400

**Hitachi CP-S220**

Weighing in at only 2.4kg, it is capable of projecting a large 60" diagonal screen image from a distance of only 1.5 metres, this projector gives you more table space (using a normal type projector from 1.5m gives only an approx. 36" size image). This is a SVGA projector producing a brightness of 800 ANSI lumens.

- \$5,995

**Hitachi CP-S310**

The CP-S310W is a true SVGA projector delivering 1,600 lumens from the lightweight of 3.2-Kg. Hitachi's CP-S310W also provides numerous connectivity options with two RGB inputs along with composite and S-Video inputs and one RGB output. Other features for the CP-S310W include manual zoom and focus, digital keystone correction and two speakers.

- \$7,995

**Hitachi CP-X320**

This new projector delivers the brightest display at 1,100 lumens and offers true XGA resolution for unmatched image quality, sharpness and colour contrast. The CP-X320 weighs 3.2kg and is easy for professionals to transport to and from the home, office or presentation site. The two RGB / video inputs, RGB output, coupled with total connectivity make this unit the most fully featured projector in it's class.

- \$8,995

Fujitsu SHOWMAN LPF4800



Hitachi CP-X325



Hitachi CP-S220



InFocus LitePro C100



InFocus Litepro LP130



InFocus Litepro LP350

**Hitachi CP-X325**

The CP-X325 has an A4 footprint and weighs less than 3.2Kgs, but with a light output of 1,400 ANSI lumens it is one of the brightest projectors on the market in its class. Dual computer inputs and slave monitor output, plus composite and S-video inputs give maximum versatility. A manual optical zoom lens allows for presentations in a variety of meeting environments. The CP-X325 has many features usually only found on larger desktop models - freeze frame, digital zoom and magnify, electronic keystone correction all controlled by a remote control with laser pointer, resulting in an ideal product for sophisticated presentations in any environment.

- \$11,495

**InFocus LitePro C100**

With 1400 ANSI lumens, this stylish projector has the brightness necessary for any mid-size installation environment combined with high contrast for great image dynamics and colours. In addition to the installation features, the C100 weighs only 3.4kg so can be easily moved between on-site locations. Operating at a level of less than 34dB, this projector ensures that the audience are focused on your presentation with no noisy distractions. The variety of connectors, wired remote control monitor output and small size make the C100 easy to install and with the ability to connect to five different sources simultaneously, one of the most versatile desktop projectors on the market.

- \$9,240

**InFocus Litepro LP130**

Truly revolutionary, this digital projector packs all the advanced features you demand into the slimmest, lightest form available. Weighing in at 1.3kg, the Litepro LP130 is only half the weight of a typical notebook. Boasting true XGA resolution and a built-in DVI connector for plug and play compatibility with your notebook, combined with video features that will guarantee to wow your audience. An amazing 1100 lumens provide outstanding brightness and image-clarity to transform a boring presentation into an awe-inspiring display. No more excess baggage! The Litepro LP130, so small you can almost fit it in your pocket.

- \$10,670

**InFocus LitePro LP260**

The LitePro LP260 makes a great first projector, or second, or third. At just over 2kg in weight, this ultra-portable projector is perfect for the "Presenter-on-the-Run". With easy plug and play connection, your simple presentation will be just as simple to present... just sit back and relax as the LP260 brings your presentation to life! Working seamlessly with your SVGA desktop, laptop or notebook computer, this projector allows you to switch easily from text to graphics, spreadsheet or video. The LitePro LP260 at 700 ANSI lumens is perfect for those making their first foray into projectors. Light enough to take with you on the road, simple to set-up and use and most importantly, affordable for every budget.

- \$5,940

**InFocus LitePro LP350**

The LitePro LP350 gives exceptional image quality and at only 3kg, is light enough to fit into your briefcase. true XGA resolution caters for high-clarity graphics while the MI-DA connector for DVI digital input provides remarkably clear images from the latest laptop, future-proofing your investment. Dazzling brightness with 1300 lumens and a contrast ratio of 400:1, the LitePro LP350 delivers exceptional viewability of on-screen images. This projector undoubtedly represents the best combination of features and performance for the discerning buyer. Sleek, user-friendly and lightweight, the LitePro LP350 is equally

# THE PROJECTOR SHOW!

The largest expo of projectors and display devices yet seen in Australia.

• Darling Harbour, February 4 - 6

Featuring hourly technology demos by Globalspeaker.org, daily seminars by Infocomm, large displays by exhibitors like Sony, and mainstream media promotion to bring in the crowds.

**Will YOUR projectors be there?**

Show manager: Caroline Fitzmaurice, +61 2 9869-4177

**Ultra-Portables (under 5kg)**



Mitsubishi Electric LVP-SA51U, LVP-X70BU and LVP-X80U are all built using the same chassis

at home on the road, in the training room, in the meeting room, or in the home theatre.

- \$7,645

**Mitsubishi Electric LVP-SA51U**

Perfect for Home Theatre, and Education applications because of its size, weight, brightness, and cost. Boasting 1000 ANSI lumens, SVGA resolution, and weighing a mere 3.4kg, the following features are standard on the LVP-SA51U: Natural Colour Matrix; Built-in Line Doubler; Digital Expanded Zoom; Cinema or Anamorphic mode; Computer output terminal; Low fan noise; and soft carry case. A very bright entry level projector from Mitsubishi Electric.

- \$5,490

**Mitsubishi Electric LVP-X70BU**

XGA resolution, 1100 ANSI lumens, and 3.4kg are the specifications of this ultra-portable projector which makes professional presentations possible anywhere. Middle of the road projector suitable for Corporate Travelers and Lecturers, Boardrooms, Home Theatre, e.t.c. Features of the LVP-X70BU include: Natural Colour Matrix; Built-in Line Doubler; Electronic Keystone Correction; Digital Expanded Zoom; Cinema or Anamorphic mode; 2 Live Picture-in-Picture; Computer output terminal; Low fan noise; Remote Control with laser pointer; and soft carry case. Produces images that are crisp, clear, and full of colour.

- \$7,990

**Mitsubishi Electric LVP-X80U**

Mitsubishi Electric's latest model with XGA resolution, 1500 ANSI lumens and weighing only 3.6kg. Performance on the move, with New Natural Colour Matrix; SRGB; Built-in Line Doubler; Direct Access Keystone Correction; Colour Uniformity Correction; Digital Expanded Zoom; Cinema or Anamorphic mode; 2 Live Picture-in-Picture; Computer output terminal; Low fan noise; Remote Control with laser pointer; and soft carry case. Suitable for Corporate, Government, Education, and Home Theatre applications. Brightness of a portable with the weight and size of an ultra-portable.

- \$9,490

NEC MultiSync VT440GK



NEC MultiSync LT150G



NEC MultiSync LT155G



**NEC MultiSync LT150G**

True XGA (1024x768) resolution. DLP technology enables the projector to produce 800 ANSI lumens in brightness and generates an image contrast ratio of 800:1, ensuring a clearer & brighter image. A built-in PC Card Viewer eliminates the need to take your PC with you to presentations and weighing an incredibly light 1.5kg and only 53mm thick, means carrying it around is a breeze. Keystone correction (+/- 30 degrees), 2 mode on-screen menu. ChalkBoard function allows you to write directly onto the projected image. Card Remote Control, built-in speaker. Input capability for devices such as PC, VCR & DVD. Automatic source selection & image adjustment. Soft carry case included. Optional accessories include component video cable, replacement lamp & presentation remote kit.

- \$8,096

**NEC MultiSync LT155G/LT156G**

XGA (1024x768) resolution with an incredible 1200 ANSI lumens (high brightness mode), 1000 ANSI lumens (eco mode - doubling your lamp life). All NEC projectors offer true portability with the built-in PC Card Viewer eliminating the need to take your PC to presentations and weighing in at only 2.2kg means the LT155G/LT156G is lighter than most notebook PC's. Full function remote control, built-in speakers. PC, VCR & DVD input capability, the LT156G also offers DVI-I input. On screen pull-down menu, keystone correction (+/- 30 degrees). ChalkBoard function allows you to write di-

rectly onto the projected image. Automatic source selection & image adjustment. Soft carry case included. Optional accessories include component video cable, replacement lamp.

- LT155G - \$8,588
- LT156G - \$9,292.

**NEC MultiSync VT440GK**

SVGA (800x600) resolution with 1100 ANSI lumens (high brightness mode), 900 ANSI lumens (eco mode - doubling your lamp life), making this projector not only affordable but economical too. The built-in PC Card Viewer eliminates the need for your PC and weighing only 3.9kg means you have a truly mobile business tool. This projector comes feature packed with a Card & full function remote control, built-in speakers, PC, VCR & DVD input capability, on screen pull-down menu, keystone correction (+/- 30 degrees). The ChalkBoard function allows you to write directly onto the projected image with the addition of a USB mouse. AccuSense & AccuBlend give you automatic source selection & image adjustment. A soft carry case is included. Optional accessories include hard carry case, component video cable & replacement lamp.

- \$5343

**NEC MultiSync VT540GK**

XGA (1024x768) resolution with 1000 ANSI lumens (high brightness mode), 800 ANSI lumens (eco mode - doubling your lamp life), making it not only affordable but economical too. The built-in PC Card Viewer eliminates the need for your PC. The unit is only 3.9kg. Low in price but not on features, this projector comes with card & full function remote control, built-in speakers, PC, VCR & DVD input capability, on screen menu, keystone correction (+/- 30 degrees). The ChalkBoard function allows you to write directly onto the projected image with the addition of a USB mouse. AccuSense & AccuBlend give you automatic source selection & image adjustment. A soft carry case is included. Optional accessories include hard carry case, component video cable & replacement lamp.

- \$7180

**Panasonic PT-L511E/P**

At first glance you'll notice the smart design that distinguishes Panasonic's portable projectors from all the others and when you turn one on, you'll see that their performance is a lot smarter too. Bright 1500 ANSI Lumens, SVGA (SXGA max.) resolution, One touch auto set-up with digital keystone correction, Extra-short throw lens allows display of larger images in smaller rooms, Quiet fans (28db) and 2 mode lamp operation for a longer lamp life. Unique Index window feature that allows a slide or video input to be frozen and stored on screen to enhance your presentation

- \$7,995

**Panasonic PT-L701SDE**

Bright 1000 ANSI Lumens, XGA (UXGA max.) resolution, SD Memory Card Support for convenient PC free presentations (Fee 16Mb Card included). One touch auto set-up with digital keystone correction, Extra-short throw lens allows display of larger images in smaller rooms, Quiet fans (28db) and 2-mode lamp operation for a longer lamp life. Unique Index window feature that allows a slide or video input to be frozen and stored on screen to enhance your presentation.

- \$9,995

**Panasonic PT-L711E/P**

Bright 1400 ANSI Lumens, XGA (UXGA max.) resolution, Micro Lens Array (MLA), One touch auto set-up with digital keystone correction, Extra-short throw lens allows display of larger images in smaller rooms, Quiet

# WITH SO MUCH TECHNOLOGY INSIDE EPSON PROJECTORS WE WANTED TO MAKE A FEW THINGS CLEAR.

**Electronic Keystone Correction**  
Digitally aligns the image to the screen.

**Panel-on-Prism Technology (POP)**  
Provides accurate image alignment and increases reliability.

**EPSON Polarisation Conversion Technology**  
Improves optical efficiency to maximise brightness.

**Easy MP**  
Memory card slot for laptop free presentations.

**Picture-in-Picture**  
Simultaneously drop-in additional visuals within existing presentation.

**UHE Lamp**  
Ultra-high lamp output - ultra-high efficiency.

**In-Built Speakers**  
All EPSON projectors have built-in sound.

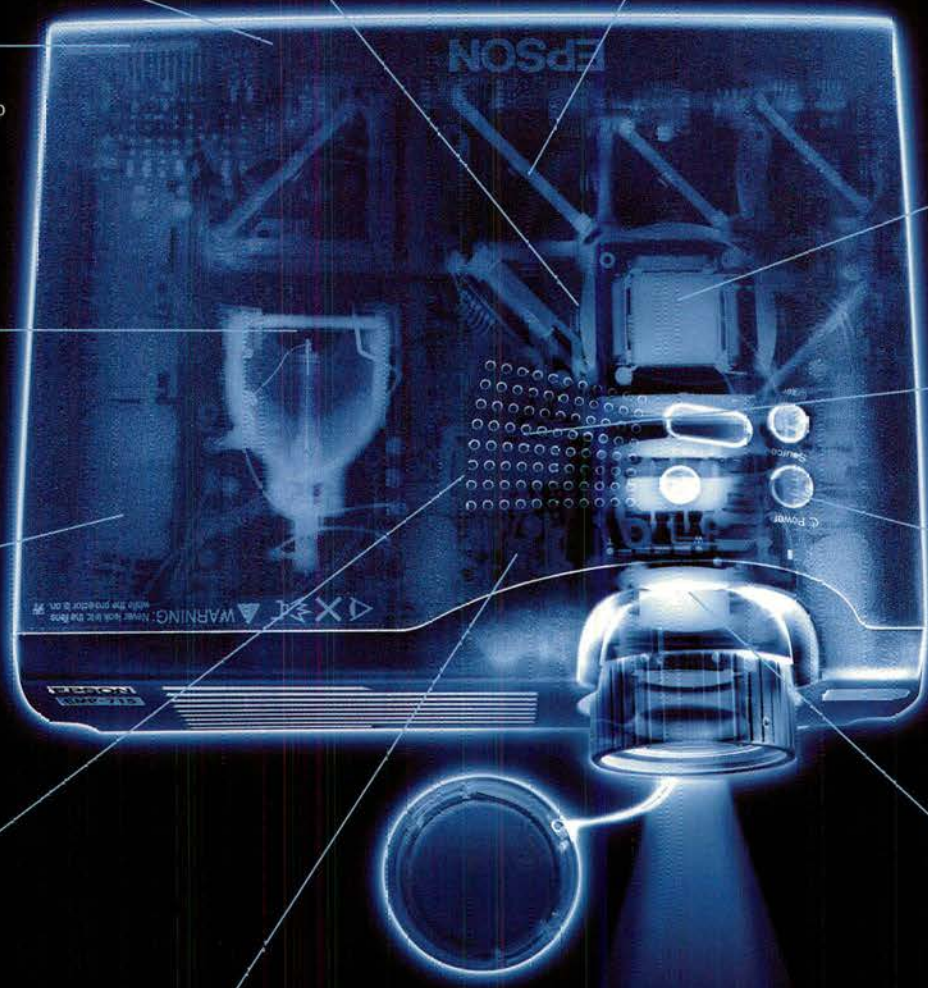
**Digital Active Resizing**  
Digitally matches your computer's resolution with the projector - simple plug and play.

**Remote Control**  
Full function remote operation including mouse control.

**True Multi-Media Usage**  
Compatible with all video and data sources including DVD.

**Integrator Lighting System**  
EPSON's ILS for consistent and uniform bright images.

**EPSON's Micro Lens Array System**  
EPSON's MLA maximises light energy - minimises heat energy.



It's easy to see why EPSON's range of multi-media projectors produce brighter, crisper images than their competitors and are also amongst the smallest and lightest in their category. From the slim ultra-portables to the ultra-bright installation class there's a model to suit your individual needs. When it comes to choosing the right multi-media projector, EPSON is the clear winner. Call 1300 652 726 for details or a demonstration and quote reference number 21002.



**EPSON**<sup>®</sup>

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

**Ultra-Portables (under 5kg)**

Plus U2-1130



Plus U2-811



Plus U3-1080



Sanyo PLCSW15



Sanyo PLCXU22



Sanyo PLCXW15



Sharp PGM15X



Sharp PGC20XE



Sharp XVZ7000E



fans (28db) and 2 mode lamp operation for a longer lamp life. Unique Index window feature that allows a slide or video input to be frozen and stored on screen to enhance your presentation.

- \$10,995

**Panasonic PT-LC50E/P**

This is a micro portable projector, which features an ultra compact body (26.7 x 7.4 x 20.8 cm) and detachable swivel stand. Lightweight 2.5kg, SVGA Resolution and SXGA Maximum Resolution, Detachable swivel stand and keystone correction for easy set-up, Bright 700 ANSI Lumens

- \$5,095

**Plus U2-1130**

This DLP XGA Projector is rated at a quite bright 1300 ANSI Lumens. Manual Zoom (x 1.2), Digital Zoom (x 4), weighs only 2.6 kg & height of 58 mm Contrast Ratio 800:1. Also available is the slightly cheaper U2-1110, which has the same specs as this unit with a brightness of 1100 ANSI Lumens.

- \$12,495

**Plus U2-811**

This projector is an A4 Size DLP SVGA Projector with 1100 ANSI Lumens. The true SVGA unit has a manual zoom (x 1.2), digital zoom (x 4) and weighs only 2.5 kg. 58mm high. Contrast Ratio 800:1.

- \$8,450

**Plus U3-1080**

A5 Palm Size Ultra Portable with XGA Micro DLP. The true 1024 x 768 XGA will scaled SXGA, VGA, SVGA to suit. Brightness of 800 ANSI Lumens, wide angle lens, digital zoom (x 0.9-10) and weighs only 1.3 kg. 48mm high. Contrast Ratio 800:1.

- \$8,950

**Plus U3-880**

A5 Palm Size Ultra Portable with SVGA Micro DLP. The true 800 x 600 SVGA engine will scale XGA, VGA. Brightness of 800 ANSI Lumens, wide angle lens, Digital Zoom (x 0.9-10), weighs only 1.3 kg. Only 48 mm high. Contrast Ratio 800:1.

- \$7,200

**Sanyo PLCSU20**

The PLCSU20 gives True SVGA Resolution at 1200 ANSI can project a detailed image up to 300" diagonally. Lightweight, yet Durable magnesium alloy cabinet is extremely light, yet can handle the rigours of the road. SANYO's own Digital Realised Interpolation Technology features elegant compression of an XGA signal to produce a crystal clear, compatible SVGA image. Anyone can use the PLC-SU20, with keystone correction and one button auto image which automatically recognises the signal coming from the computer and selects the proper settings, it's perfect for school use, training, and much more.

- \$7,695

**Sanyo PLCSW15**

With a footprint no larger than a letter size sheet of paper, the PLC-SW15 weighs only 2.6 kilos, yet delivers 850 ANSI of SVGA capable performance. The PLC-SW15 with component video inputs is perfect on the road for presentations or at home for the movies on the weekends. The SANYO PLC-SW10 is High Definition Television Compatible, accepting the current HDTV resolution standards. The PLC-SW15 employs a new Whisper Quiet fan which produces an amazingly low noise level of only 39 dBA.

- \$6,395

**Sanyo PLCXU22**

True XGA Resolution. Supercrisp, 1024 x 768 resolu-

tion at 1200 ANSI can project a detailed image up to 300" diagonally. Lightweight, Yet Durable magnesium alloy cabinet is extremely light, yet can handle the rigours of the road. SANYO's own Digital Realised Interpolation Technology (DRIT) features elegant compression of an SXGA signal to produce a crystal clear, compatible XGA image. Anyone can use the PLC-XU22, with keystone correction and one button auto image which automatically recognises the signal coming from the computer and selects the proper settings, it's perfect for school use, corporate presentations, and much more. Built-in PC-card slot, 8MB SmartMedia® card and PC-card adaptor for computerless presentations.

- \$9,995

**Sanyo PLCXW15**

Lightweight, compact and with a footprint no larger than a letter size sheet of paper, the PLC-XW15 weighs only 2.6 kilos, yet delivers 800 ANSI of XGA professional performance. The PLC-XW15 comes with component video inputs and a new Digital RGB Matrix IC that makes projection of DVD and HDTV possible. SANYO's proprietary Colour Controller ensures a uniform projection, improving uneven colour and brightness of images. The PLC-XW15 employs a new Whisper Quiet fan which produces an amazingly low noise level of only 39 dBA.

- \$8,500

**Sharp PGC20XE**

Affordable micro portable LCD projector for people on the go. 1000 ANSI lumens, true XGA resolution 1024 x 768, SXGA res in intelligent compression, 500:1 contrast ratio, DVD compatible, 1:1.2 zoom lens, digital keystone correction, auto response adjust, on screen menu, resize function, low fan noise, inputs include video, s-video, PC-RGB/component, audio L/R RRP 2.6 kgs

- \$9,500

**Sharp PGM15S**

Micro portable DLP projector for people on the go. 0.7" DMD\* x 1, 1100 ANSI lumens, true SVGA resolution 800 x 600, SXGA, XGA, Mac 21 & Mac 19 res in intelligent compression, 1:1.2 manual zoom and focus, 500:1 contrast ratio, active digital keystone correction, auto response adjust, low fan noise, inputs include DVI, video, s-video, PC-RGB, audio L/R RRP 1.6 kgs

- \$8,499

**Sharp PGM15X**

Micro portable DLP projector for people on the go. 0.7" DMD\* x 1, 1100 ANSI lumens, true XGA resolution 1024 x 768, SXGA and Mac 21, res in intelligent compression, 1:1.2 manual zoom and focus, 500:1 contrast ratio, DTV compatible (1080I, 720P, 480P) active digital keystone correction, auto response adjust, low fan noise, inputs include DVI, video, s-video, PC-RGB, audio L/R RRP 1.6 kgs

- \$11,995

**Sharp XVZ7000E**

Ultracompact LCD Video/Data projector designed for home theatre and educational use. 1000 ANSI lumens, true SVGA resolution 800 x 600, SXGA and XGA res in intelligent compression, DVD/DTV/HDTV 1080I, 720P, 480P with 4:3 and 16:9 aspect ratios, 1:1.2 zoom lens, digital keystone correction, high quality picture circuits-3D Y/C separation. auto response adjust, on screen menu, low fan noise, inputs include video, s-video, PC-RGB/component, component, audio L/R, 2.6kgs ceiling mountable.

- \$8,429

**Sony VPL-CS3**

With the same smart chassis as the CX3, the CS3 is Sony's entry level Ultra Compact projector. 700 ANSI lumens, SVGA native resolution and LCD's superior

# NEC



## Powerful projection in a small package.

### NEC MultiSync LT155 Micro Portable Projector

With an NEC LT155, you get more than just one of the smallest, lightest projectors ever made. You get an instantly mobile business tool. Nothing is more frustrating than waiting for your laptop to boot up in front of a busy audience. With the PC Card Viewer you can set up and start presenting in less than a minute, directly from the projector, so you can leave your notebook behind. By connecting a USB mouse you can even make on-screen annotations. With NEC's exclusive AccuBlend & AccuSense technology, setting up LT155 requires little more than connecting it. The LT155 really is the ultimate tool for professionals on the go.



NEC has a range of projectors to suit any application including the micro portable LT Series, ultra portable VT Series, the powerful MT Series for boardroom and fixed installations and the highlight output GT1150 and XT5000 projectors for large venues.

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**Ultra-Portables (under 5kg)**

**Ultra-Portables (SVGA 800x600 Resolution)**

ITEM	RRP	ANSI	Engine
ELMO EDP-S10	\$4,495	800	3xLCD (0.7")
Sony VPL-CS3	\$4,950	700	3xLCD (0.7")
Acer Palmpro 7763PS	\$4,999	800	1xDLP (0.7")
Panasonic PT-LC50E/P	\$5,095	700	3xLCD (0.7")
NEC MultiSync VT440GK	\$5,343	1100	3xLCD (0.9")
Canon LV-5100	\$5,445	700	3xLCD (0.7")
Mitsubishi Electric LVP-SA51U	\$5,490	1000	3xLCD (0.9")
Acer Palmpro 7763P	\$5,499	800	1xDLP (0.7")
InFocus LitePro LP260	\$5,940	700	1xLCD (0.7")
Epson EMP - 50	\$5,990	1000	3xLCD (0.7")
Hitachi CP-S220	\$5,995	800	1xLCD (0.7")
Sanyo PLCSW15	\$6,395	850	3xLCD (0.7")
Acer Palmpro 7763PA	\$6,499	1100	1xDLP (0.7")
ViewSonic PJ 875	\$6,637	1000	1xDLP (0.7")
Plus U3-880	\$7,200	800	1xDLP (0.7")
Epson EMP - 50S	\$7,500	1100	3xLCD (0.9")
Sanyo PLCSU20	\$7,695	1200	3xLCD (0.9")
Hitachi CP-S310	\$7,995	1600	3xLCD (0.9")
Panasonic PT-L511E/P	\$7,995	1500	3xLCD (0.9")
Toshiba TLP-470	\$8,008	1200	3xLCD (0.9")
Sharp XVZ7000E	\$8,429	1000	3xLCD (0.9")
Plus U2-811	\$8,450	1100	1xDLP (0.7")
Sharp PGM15S	\$8,499	1100	1xDLP (0.7")
InFocus LitePro C100	\$9,240	1400	3xLCD (0.9")

**Ultra-Portables (XGA 1024x768 Resolution)**

ITEM	RRP	ANSI	Engine
Sony VPL-CX2	\$6,600	750	3xLCD (0.7")
Elmo EDP-X20	\$6,995	1100	3xLCD (0.9")
NEC MultiSync VT540GK	\$7,180	1000	3xLCD (0.9")
Epson EMP - 70	\$7,200	700	3xLCD (0.7")
Canon LV-7105	\$7,254	800	3xLCD (0.7")
Acer Palmpro 7765PE	\$7,499	800	1xDLP (0.7")
InFocus Litepro LP350	\$7,645	1300	1xDLP (0.7")
Mitsubishi Electric LVP-X70BU	\$7,990	1100	3xLCD (0.9")
NEC MultiSync LT150G	\$8,096	800	1xDLP (0.7")
Fujitsu SHOWMAN LPF4800	\$8,400	1500	3xLCD (0.9")
Acer Palmpro 7765PA	\$8,499	1100	1xDLP (0.7")
Sanyo PLCXW15	\$8,500	800	3xLCD (0.7")
Toshiba TLP-B2	\$8,580	1000	3xLCD (0.9")
NEC MultiSync LT155G	\$8,588	1200	3xLCD (0.9")
Sony VPL-CX3	\$8,800	900	3xLCD (0.7")
Plus U3-1080	\$8,950	800	1xDLP (0.7")
Hitachi CP-X320	\$8,995	1100	3xLCD (0.9")
Acer SL700X	\$8,999	1000	1xDLP (0.7")
ViewSonic PJ1075	\$9,220	1200	1xDLP (0.9")
NEC MultiSync LT156G	\$9,292	1200	3xLCD (0.9")
Mitsubishi Electric LVP-X80U	\$9,490	1500	3xLCD (0.9")
Acer VP110X	\$9,499	1400	3xLCD (0.9")
Sharp PGC20XE	\$9,500	1000	3xLCD (0.9")
Sony VPL-CX10	\$9,790	1200	3xLCD (0.9")
Epson EMP - 71S	\$9,990	1200	3xLCD (0.9")
Panasonic PT-L701SDE	\$9,995	1000	3xLCD (0.9")
Sanyo PLCXU22	\$9,995	1200	3xLCD (0.9")
InFocus Litepro LP130	\$10,670	1100	1xDLP (0.7")
Plus U2-1110	\$10,750	1100	1xDLP (0.7")
Panasonic PT-L711E/P	\$10,995	1400	3xLCD (0.9")
Hitachi CP-X325	\$11,495	1400	3xLCD (0.9")
Toshiba TLP-670	\$11,935	1300	3xLCD (0.9")
Sharp PGM15X	\$11,995	1100	1xDLP (0.7")
Plus U2-1130	\$12,495	1300	1xDLP (0.7")

colour saturation all make the CS3 great value for anyone wanting a big image on a small budget. Maximum screen size is 150" through the 1.3 times zoom lens, and the Auto Pixel Alignment function assures the best images at the press of a button. Inputs include 15 pin RGB, S-Video and Composite video and stereo audio. Low noise operation, digital keystone correction, 4 times digital zoom, freeze function and a soft carry bag complete the 2.5kg package.

• \$4,950

**Sony VPL-CX10**

The CX10 is a portable projector with 1200 ANSI lumens of XGA brightness, delivering high quality images on screens of up to 300 inch diagonal. Other features include digital keystone correction, USB hub with remote mouse function, 4 times digital zoom and HDTV compatibility. Full installation capabilities add to the CX10's appeal. Weighing just 3.3kg and with low noise, the CX10 is an ideal portable powerhouse. It's companion model, the VPL-CS10, delivers 1000 ANSI lumens with SVGA resolution and a similar feature set.

• \$9,790

**Sony VPL-CX2**

Sharing the same chassis as the CS3 and CX3, the 2.5kg CX2 has all the features of the CS3, but with XGA native resolution and 750 ANSI lumens. The smart flip-up front cover protects the lens during transit, and delivers the speakers and controls to the top of the projector when it opens. Easy height adjustment, minimum light spillage and low noise were part of the design spec for this series of ultra portable projectors, and their unique form and exceptional performance sets them apart in the ultra compact projector market.

• \$6,600

**Sony VPL-CX3**

The CX3 is the smartest ultra compact projector going. Weighing just 2.5kg and delivering 900 ANSI lumens with the colour saturation you expect from LCD technology the CX3 lets you deliver cable free presentations through it's Memory Stick slot. Using the supplied Projector Station software you can translate your Powerpoint files onto a memory stick either in your PC or over the USB cable and into your projector. You can then show the slides directly off the Memory Stick with no need for a PC at all. CX3 also features remote mouse, digital keystone correction, 4 times digital zoom and inbuilt speakers.

• \$8,800

**Toshiba TLP-470**

The TLP-470 is an ultra-bright portable performer at 1200 ANSI lumens with SVGA resolution makes the TLP-670 ideal for almost any presentation in any environment. Weighing just 3.7 Kg and offering Automatic Digital Keystone-Correction, user friendly menu controls and a 400:1 contrast ratio. If you want advanced performance in an ultra compact ultra light package then look no further than this lean-machine. Inputs include RGB, composite video, S-video, and audio. Outputs include RGB and audio. Supplied with a remote control, 2 year warranty, plug & play set-up and padded carry bag.

• \$8,008

**Toshiba TLP-670**

The Toshiba TLP-670 includes all the features you would expect from Toshiba including Automatic Digital Keystone-Correction, user-friendly icon-based menu and a true 1300 ANSI lumens brightness with XGA resolution, presentations become a breeze in almost any environment at any time. Weighing just 3.7 Kg, you can rest assured that you have the ultimate in portable projection equipment. A full function remote control with mouse remote, 2 year warranty, plug and play set-up, and a padded carry bag are all included.

• \$11,935

**Toshiba TLP-B2**

The name Toshiba is synonymous with quality and performance and the Toshiba range of portable projectors are again setting the standards. The Toshiba TLP-B2 is an ultra portable and compact projector offering the ultimate in features and user-friendly controls. The ultra-compact design weighs-in at just 2.6 Kg and offers true 1000 ANSI lumens XGA resolution and a 400:1 contrast ratio delivering crisp, clear images with true to life colours. Automatic Digital Keystone-Correction is achieved at the press of a button while an easy to understand icon-based menu will guide you through every user-configurable control to ensure your presentation second to



# Sharp not only make LCD TV's



## Sharp also make LCD Projectors



PGM15S/X



PGC20XE



PGC30XE



XGNV6XE



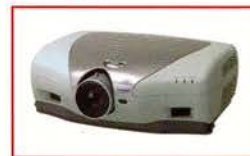
XGV10XE



XGV10WE/XE



XVZ7000E



XVZ9000E

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**Ultra-Portables (under 5kg)**

Canon LV-7325



none. Inputs include RGB, S-video, composite video and audio. Combine the B-2 with our aluminium smart case and you are ready for business anywhere, anytime.

- \$8,580

**ViewSonic PJ 875**

Full featured micro portable projector. PJ875 projects at 1000 lumens accepts SVGA to XGA resolutions and has a 450:1 contrast ratio. Adjustable digital keystone correction, video picture-in-picture, long lamp life, remote control and a soft carry case makes this projector an excellent choice in any presentation. Light weight and ultra compact, 5 pound micro portable with a vertical slim profile for easy travel. Professional-level 1000 ANSI lumens projects bright images in well lit rooms. True SVGA 800 x 600 resolution, compressed XGA 1024 x 768, compatible with most major notebook computers while supporting a wide variety of applications, digital keystone correction. Squares the picture even when projecting at an angle. Built in zoom and focus lens for extra flexibility and functionality. Delivers great video and can turn any wall in your home screen home entertainment system.

- \$6,637

**ViewSonic PJ1075**

The LiteBird 1075 offers superb image quality as well as high brightness and reliability, making it easy to present even in well-lit rooms. Adjustable zoom, digital keystone correction, video picture-in-picture, long lamp life, remote control and soft carrying case make this projector your presentation solution in any setting. Ultra light-weight and compact, high Brightness 1200 Lumens. True XGA 1024 x 768 resolution, compressed SXGA 1280 x 1024. Texas instruments DLP digital light processing technology. Digital keystone correction. Picture-in-Picture capability, personal theater projection for movies, sports and more. Built in zoom and focus lens for extra flexibility and functionality. Also delivers great video and can turn any wall in your home into a big screen home entertainment system.

- \$9,220

**PORTABLES (Under 15Kg)**

**Canon LV-7320**

When you need a portable projector that will deliver first rate presentations in any environment the LV-7320 is the ideal projector. Flexible functions such as automatic set up finds the perfect connection between the projector and your laptop. Other smart features include: superior Canon optics, 1250 Ansi lumens, turbo brightness, native XGA, 90% uniformed brightness, powered zoom and focus, plug and play, 12% digital keystone correction, remote control, 150W UHP lamp, true multimedia inputs, 1W monaural audio output, in-built speaker, video compatibility NTSC, PAL, SECAM, NTSC 4.43, PAL-M, PAL-N, 4.2kg, 238.8mm(w) x 89mm(h) x 335mm(d).

- \$8,195

**Canon LV-7325**

Whether you need to create knockout presentations for roadshows or a state-of-the-art boardroom the LV-7325 does both brilliantly. It has the power and flexibility for a universe of applications from executive meetings to successful sales pitches. Have PC - Free presentations with the PCM-CIA card, load images or presentations onto a flashcard then load the card directly into the LV-7325. Smart features include: superior Canon optics, 1500 Ansi lumens, turbo brightness, native XGA, 90% uniformed brightness, powered zoom and focus, plug and play, 12% digital keystone correction, remote control, 150W UHP lamp, true multimedia inputs, 1W monaural audio output, in-built speaker, video compat-

ibility NTSC, PAL, SECAM, NTSC 4.43, PAL-M, PAL-N, 4.3kg, 238.8mm(w) x 89mm(h) x 335mm(d).

- \$9,597

**Canon LV-7525**

When you need to deliver a presentation that is an auditorium spectacular your best choice is the LV-7525. Luminous, full of features and smart technology, the LV-7525 maximizes your ability to dazzle your audiences. A unique option of dual PC input gives you unbelievable presentation capabilities. Smart features include: superior Canon optics 2750 Ansi lumens, turbo brightness, native XGA, dual PC, 90% uniformed brightness, powered zoom and focus, plug and play, 40% digital keystone correction, remote control, 300w UHP lamp, true multimedia inputs, 2W+2W audio output, in-built speakers, video compatibility NTSC, PAL, SECAM, NTSC 4.43, PAL-M, PAL-N, 7.0kg, 269.8mm(w) x 131.3mm(h) x 411.2mm(d).

- \$13,475

**Elmo EDP-6200**

The Elmo EDP-6200 is a bright, yet affordardable projector, designed for use in rooms where an ultra-portable would simply not be good enough. The 3 chip LCD device has a native resolution of XGA and is rated at 1900 ANSI Lumens. Optional accessories include a tele-converter lens to extend the throw distance from 14m to 17.7m. Accepts most standard vision signals.

- \$8,995

**Epson EMP- 800**

Packed with useful functions, the 4.2kg, XGA EPSON EMP-800 provides outstanding brightness with 1500 ANSI lumens and quality. For impressive presentation EPSON have introduced two new features; horizontal keystone correction and six-code colour selection. The six-code colour selection ensures the colours created in your presentation file are the colours seen on screen. EPSON's horizontal and vertical keystone corrections help to ensure the projected clear image is aligned regardless of where the projector is placed in the room.

- \$TBC (new product to be released in August)

**Epson EMP- 810**

The EPSON EMP - 810 is the premium desktop XGA projector. With horizontal and vertical keystone corrections to ensure you get the image output you require regardless of where you have the projector placed in the room, 2000 ANSI lumens, improved colour processing and images, sRGB mode, analogue and digital compatibility, multiple score input all packed into a 4.2kg body the EMP-810 is really the leader in its class.

- \$TBC (new product to be released in August)

**Epson EMP-7700**

The EPSON EMP-7700 is a premium desktop projector suitable for use in boardrooms, conference centres, auditoriums and for the demanding portable user. With its improved brightness of 3000 ANSI lumens and image quality the EMP-7700 moves desktop XGA projectors to a new dimension. Add to this a reduction in noise level and the EMP-7700 is the ideal XGA premium desktop or easy installation projector. Supporting all worldwide video formats, the EMP-7700 also offers two computer inputs, one of which is a DVI-D digital input. It also supports component video, composite and s-video. Utilising EPSON's third generation resizing, DAR (Digital Active Resizing), the EMP-7700 is able to display high quality VGA, SVGA, SXGA and UXGA images, making it ideal for engineering workstation applications.

- \$18,700

**Epson EMP-8150**

The EPSON EMP-8150 is an XGA network projector ideal for an installation environment and is suitable for

Epson EMP- 800



Epson EMP-8150



**Portables (5 to 15kg)**

large venues. Optional long throw and wide-angle lenses are available. The EMP-8150 heralds the 'next generation' in advanced data projectors. Featuring cutting edge technology, it is able to connect to network resources with its own IP address, and also features a PCMCIA card slot for presentations stored on memory cards. EPSON's unique E@syMP system allows the projector to link to a LAN via a 10/100BaseT link. By using a wireless LAN system, the projector provides PC-free and cable-free access to presentations. Thanks to built-in memory, presentations can be transmitted to the projector through the network in advance, or as you present, adding extra convenience. The EMP-8150 boasts an ultra-bright 3200 ANSI lumens to make your presentations come to life even with high ambient light. Anticipated

- \$28,500

**Fujitsu LPF7200**

Fujitsu General (Aust.) Pty. Has released its latest brightest LCD projector, the LPF 7200. This model delivers brightness of 2,800 lumens (ANSI), and casts true pin sharp XGA 1024 x 768 images. Fujitsu General used three 1.3 inch LCD panel and 250W NSH lamp produce one of the brightest projector in the market. With contrast ratio 300:1, the projector has a throw distance from 2.1 to 10.9m, and has a projection screen size from 60" to 300" inches. Users can choose from a wide range of functions that the LPF 7200 offers. Employing the digital keystone correction function, users can easily correct trapezoid distortion. Users can enlarge a projected image with the digital zoom function. The LPF 7200 accommodates formats such as DVD and HDTV 1080i yielding crisp sharp images. The LPF 7200 measures 282w x 150d x 429mm, weight 7.8 KG

- \$16,186

**InFocus LitePro LP530**

Introducing the projector that does more for less. The InFocus LitePro LP530 meets all your conference room and mobile needs – at a price that won't blow your budget. For an instant upgrade, simply snap on its expansion module and turn a conference room dynamo into a state-of-the-art projector with even more power. With 2000 lumens the LitePro LP530 projects truly stunning images in any setting and the zoom lens, digital

keystone correction and elevator foot ensure perfect image size, focus and position. At only 2.1kg the LitePro LP530 is deceptively light and the native XGA, full-featured remote monitor output, 3.0 watt integrated audio system and DCDi video technology complete this sleek projector package.

- \$10,900

**InFocus LitePro LP920**

The InFocus LitePro 920 is the conference room projector with all the features and functions of today's high-end fixed projectors. Providing a cost effective highly connectable meeting room solution, the LP920 is designed for connectivity. Featuring 4 audio inputs, 3 video and 4 data inputs, the LP920 can be used to effortlessly switch among all sources creating exciting multimedia presentations that captivate audiences. This fixed installation projector sacrifices nothing compared to other high-end fixed projectors. With 2200 lumens, it's bright images, quiet operation and maximum connectivity make it the ideal solution for large venue environments. And, by matching the case colour to that of typical acoustical ceiling tiles, the projector is barely visible.

- \$15,290

**InFocus LitePro LP930**

Have your audience searching high and low for the source of your brilliant presentation with the LitePro LP930 projector. With this projector hanging stealthily from your acoustical ceilings, invisible to even the experienced eye, your venue will come alive with 3200 lumens of brightness and blazing colour. The LitePro LP930 has flawless data and video quality, as well as manual zoom and focus to create the perfect image. With four classes of input terminals, true XGA and whisper quiet operation, the LitePro LP930 will generate presentations that will captivate your audience time after time.

- \$20,020

**JVC DLA-G3010Z**

The small, light and affordable D-ILA™ 5-XGA/UXGA projector - Original D-ILA technology for smooth images with optimised contrast. It provides 1365 x 1024 native SXGA resolution, 1500 ANSI lumens. The DLA-G3010Z is also UXGA (1600 x 1200) compatible, mak-

InFocus LitePro LP530



InFocus LitePro LP920



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## Portables (5 to 15kg)

Mitsubishi Electric LVP-X390U and LVP-X400U both use the same chassis



ing it ahead of its time. Adaptive Digital Pixel Conversion, Digital Gamma correction with colour enhancement technology. A portable 6.0 kg in weight and 290 x 132 x 350mm in size. Other features include: - Freeze frame, selectable colour temperature, digital keystone correction, 1.3x optical zoom/ 16x digital zoom function, fluorescent remote and basic plug and play setup.

- \$17,000

### JVC DLA-M2000L

Big screen images have never looked so good – The DLA-M2000L delivers SXGA (1365 x 1024) images. The 550W Xenon lamp generates a massive 2000-ansi lumens, providing a sharp image even in a bright room. Its light-weight, stackable and compact design makes it suitable for a number of high-powered solutions. List price of around.

- \$34,540

### Mitsubishi Electric LVP-X390U

Suitable for both portable or fixed installation applications, the LVP-X390U boasts 2200 ANSI lumens of brightness, is XGA resolution (native) and weighs only 6.7kg. Features include: Built-in Line Doubler; Electronic Keystone Correction; Colour Uniformity Correction; Digital-Expanded Zoom; New Natural Colour Matrix; 2 Live Picture-in-Picture; Cinema or Anamorphic mode; Very Low fan noise; and Remote Control with Laser Pointer. Brilliant colours and ease of use are characteristics of the LVP-X390U. Inputs include two PC and two video and is compatible with HDTV.

- \$12,490

### Mitsubishi Electric LVP-X400U

With 3000 ANSI lumens of brightness and weighing only 6.7kg, the LVP-X400U is suitable for applications ranging from corporate boardrooms up to large auditoriums, or lecture theatres. Native resolution is XGA (1024 x 768) with the following advanced features standard: Built-in Line Doubler; Electronic Keystone Correction; Digital-Expanded Zoom; New Natural Colour Matrix; 2 Live Picture-in-Picture; Colour Uniformity Correction; Cinema or Anamorphic mode; Very Low fan noise; and Remote Control with Laser Pointer. Inputs include two PC and two video, and is compatible with HDTV. A high end projector with a reasonable cost.

- \$15,990

### NEC MT850G

SVGA (800x600) resolution with 1700 ANSI lumens (high brightness mode) 1300 ANSI lumens (Eco-mode). Weighs only 5.9kg. Advanced AccuBlend for accurate display of non-native resolutions. Keystone Correction (+/- 30 degrees). Built-in PC Card Viewer.

- \$6,828

NEC MultiSync MT1055G



### NEC MultiSync MT1050G

XGA (1024x768) resolution with 2100 ANSI lumens (high brightness mode), 1600 ANSI lumens (eco-mode). Weighs only 5.9kg. Advanced AccuBlend for accurate display of non-native resolutions. Keystone correction (+/- 30 degrees). ChalkBoard 'draw' and write notes on a projected image. Built-in PC Card Viewer – save your slides onto a Compact Flash memory card. Built-in stereo speakers. Full function remote control. Contains both monitor and audio out serial ports. Also DTV and HDTV capable. USB Mouse, digital zoom and help menu. Optional accessories include replacement lamp, hard or soft carry case, component video cable, ceiling mount kit, wide angle zoom lens, rear projection lens.

- \$11,123

### NEC MultiSync MT1055G

XGA (1024x768) resolution with 2600 ANSI lumens (high brightness mode), 2000 ANSI lumens (eco-mode). Weighs only 6.0kg. Advanced AccuBlend for accurate display of non-native resolutions. Keystone correction (+/- 30 degrees). ChalkBoard – 'draw' and write notes on a projected image. Built in PC Card Viewer. Built in stereo speakers.

- \$13,376

### Panasonic PT-L6500E/EL

Ultrabright 3600 ANSI lumens, New BriteOptic TM technology and UHM TM Lamps , True XGA (1280 x 1024), Maximum UXGA (1600 x 1200) resolution , Lens shift and digital keystone correction so you can get a perfect image everywhere every time, Multiple terminals, including digital video interface, Easy installation with auto set-up feature, Stackable for double brightness (up to 7200 ANSI lumens), "EL" version delivers the same superior performance as the PT-L6600E but comes with no lens. Combine it with an optional lens to get the exact performance you need according to usage and operating conditions.

- \$19,995

### Panasonic PT-L6600E/EL

Panasonic's PT-L6600E/EL and PT-L6500E/EL LCD Projectors incorporate our highly acclaimed BriteOptic TM dual lamp system which delivers high-definition images with superb brightness. Ultrabright 3600 ANSI lumens, New BriteOptic TM technology and UHM TM Lamps , True SXGA (1280 x 1024), Maximum UXGA (1600 x 1200) resolution , Lens shift and digital keystone correction so you can get a perfect image everywhere every time, Multiple terminals, including digital video interface, Easy installation with auto set-up feature, Stackable for double brightness (up to 7200 ANSI lumens), "EL" version delivers the same superior performance as the PT-L6600E but comes with no lens. Combine it with an optional lens to get the exact performance.

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Buhl Optical has a large selection of zoom, long-throw and wide-angle accessory lenses for most brands of LCD projectors. Our lenses let you place your projector anywhere in the room and still completely fill your screen with sharp, bright, colorful images. So, whether you need a lens with a longer or shorter focal length than you projector's prime lens, we have the lens you need to produce larger or smaller images at whatever distance you require.

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ance you need according to usage and operating conditions.

- \$29,995

**Panasonic PT-L759E**

2500 ANSI Lumens, XGA (UXGA Max.) resolution and intelligent image Resizing. One touch at to set-up and digital keystone correction, Wireless remote with mouse control, arrow key control and built in laser pointer, Adjustable long throw projection: a digital variable compression function allows the user to reduce the size of projected images freely from x1.0 to x0.5, for simple adjustment of long-throw projection without the need for an additional tele conversion lens.

- \$15,995

**Sanyo PLCXP18**

PLCXP18, the board choice with 2000 ANSI and a stunning 700:1 contrast ratio. As with all current Sanyo projectors the PLC-XP18 employs a new "Whisper Quiet" fan which produces an amazingly low noise level of only 39 dBA. SANYO's digital keystone correction feature compensates for angled projector placement. The SANYO PLC-XP18 is High Definition Television Compatible with current Australian HDTV resolution standards. While the standard lens that comes with the PLC-XP18 gives plenty of flexibility, optional wide-zoom and long-zoom lenses are available to provide even greater flexibility.

- \$13,750

**Sanyo PLCXP21**

The PLCXP21 is a powerful performer with 2500 ANSI and a stunning 700:1 contrast ratio. SANYO digital signal processing circuit and color correction together with progressive scanning, substantially increasing video-image detail and resolution. SANYO's digital keystone correction feature compensates for angled projector placement. The SANYO PLC-XP21 is High Definition Television Compatible, accepting the 1080i, 1035i, 720p, 575p, and 480p HDTV resolution standards. While the standard lens that comes with the PLC-XP21 gives plenty of flexibility, optional wide-zoom and long-zoom lenses are available to provide even greater flexibility.

- \$16,500

**Sharp PGC30XE**

Ultracompact LCD projector packaged with features for you high quality presentations, 1700 ANSI lumens, true XGA resolution 1024 x 768, UXGA and SXGA res in intelligent compression, DVD/DTV/HDTV 1080i, 720P, 480P with 4:3 and 16:9 aspect ratios, network connectivity and remote access via SAPS\*, 1:1.3 zoom lens, digital keystone correction, auto response adjust, I/P conversion, on screen menu, low fan noise, Network ready: IrDA trans, inputs include video, s-video, PC-RGB, audio L/R. 4.8 kgs

- \$16,640

**Sharp XGNV6XE**

Ultra bright, high resolution, compact LCD projector with various terminals. 2200 ANSI lumens, DVD compatible, true XGA resolution, UXGA and SXGA res in intelligent compression, 1:1.3 power zoom and focus digital keystone correction, auto response adjust, I/P conversion, low fan noise, Network ready: IrDA trans, inputs include RCA, S video, RGB x PC x 2, Audio L/R RRP 7.2kgs

- \$19,249

**Sharp XGP10XE**

Affordable bright LCD projector with a compact body for presentation or business meetings. 3000 ANSI lumens, true XGA resolution 1024 x 768, UXGA and SXGA res in intelligent compression, DVD/DTV/HDTV 1080i, 720P, 480i, 480P with 4:3 and 16:9 aspect ratios, net-

work connectivity and remote access via SAPS\*, 1:1.3 power zoom and focus, 350:1 contrast ratio, digital keystone correction, auto response adjust, I/P conversion, low fan noise, inputs include video, s-video, PC-RGB, audio L/R 7.3kgs. USP High brightness projector with Sharp Advanced Presentation Software. A PC with Sharp Advanced Presentation Software checks each projectors condition and collects relevant information. If it detects something wrong, a signal is sent to the management computer for support. With a single PC, up to ten projectors can be controlled with the installation of a COM port board.

- \$20,400

**Sony VPL-FX50**

The VPLFX50 delivers high quality images in almost any environment. XGA native resolution, 3500ANSI lumens and motorised zoom, focus and lens shift make this an ideal projector for rental and staging applications and it's stylish design and quiet operation mean it's at home in any boardroom. Interchangeable lenses from the PX21/31 range fit the FX50 and the inputs include 5 BNC, DVI, S-Video and Composite Video. It includes RS232 and Ethernet ports for control, can be stacked for higher brightness and includes a 15pin loop out connector. FX50 is another of Sony's Network Projectors, with an inbuilt PC running Powerpoint Viewer, Image Viewer and Internet Explorer applications.

- \$26,000

**Sony VPL-PX10**

The VPL-PX10 is a brand new design from Sony delivering 2000 ANSI lumens with native XGA resolution in a compact chassis weighing just 4.9kg. Optional lens adaptors provide short and long throw capability, and its quiet operation and stylish design mean that it is just as much at home in the boardroom as the rental and staging market. The compact low noise design includes a "hide-away" connector panel, to ensure that it always looks it's best in any situation. Accepting up to SXGA input signals and with rear and ceiling mounting capabilities the PX10 is the next generation of Sony workhorse.

- \$12,100

**Sony VPL-PX15**

The PX15 is based on the new Sony PX10, delivers the same performance and supports the same options. The PX15 also incorporates Sony's Network Projector facilities. These provide an Ethernet connector and a PC card slot. The inbuilt web server allows easy control of the PX15 from any PC with a web-browser, including the transfer of files into the PX15's internal 32Mb memory. Applications included inside the PX15 include Powerpoint and Image viewers and Internet Explorer for web surfing directly from the projector. The PC card slot will support a memory storage card (or Memory Stick with adaptor) or a Wireless LAN card for cable free presentations.

- \$13,750

**Sony VPL-PX31**

The VPL-PX31 is a tried and proven portable projector with 2800 ANSI lumens and native XGA resolution. Short and long interchangeable lenses add flexibility, as do the wide range of inputs, including 5 BNC, DVI, 15 pin, S-Video and Composite Video, with audio inputs and controlled audio output, RS232 control and control S, 2 brightness modes and up to 3000 hour lamp life. It weighs just 5.7kg and is easily carried from job to job or installed in rear projection or ceiling mounted applications. Very quiet operation adds to its attractiveness!

- \$18,150

**Toshiba TLP-471 with document camera**

Panasonic PT-L6600E/EL



Sanyo PLCXP18



Sharp XGNV6XE



Sony VPL-FX50



Sony VPL-PX31



*Portables (5 to 15kg)*

**Portables (SVGA Native Resolution)**

ITEM	RRP	ANSI	Engine
NEC MT850G	\$6,828	1700	3xLCD (1.3")
ViewSonic PJ860	\$9,359	1850	3xLCD (0.9")
Toshiba TLP-471 with document camera	\$10,010	1200	3xLCD (0.9")

**Portables (XGA 1024x768 Native Resolution)**

ITEM	RRP	ANSI	Engine
Panasonic PT-L6600E/EL	\$29,995	3600	S3xLCD (1.3")
Canon LV-7320	\$8,195	1250	3xLCD (0.9")
Elmo EDP-6200	\$8,995	1900	3xLCD (1.3")
Canon LV-7325	\$9,597	1500	3xLCD (0.9")
InFocus LitePro LP530	\$10,900	2000	1xDLP (0.7")
NEC MultiSync MT1050G	\$11,123	2100	3xLCD (1.3")
Sony VPL-PX10	\$12,100	2000	3xLCD (1.3")
Mitsubishi Electric LVP-X390U	\$12,490	2200	3xLCD (1.3")
ViewSonic PJ1060	\$13,204	2000	3xLCD (1.3")
NEC MultiSync MT1055G	\$13,376	2600	3xLCD (1.3")
Canon LV-7525	\$13,475	2750	3xLCD (1.3")
Toshiba TLP-671	\$13,475	1300	3xLCD (0.9")
Sanyo PLCXP18	\$13,750	2000	3xLCD (1.3")
Sony VPL-PX15	\$13,750	2000	3xLCD (0.9")
InFocus LitePro LP920	\$15,290	2200	3xLCD (1.3")
Mitsubishi Electric LVP-X400U	\$15,990	3000	3xLCD (1.3")
Panasonic PT-L759E	\$15,995	2500	3xLCD (1.3")
Fujitsu LPF7200	\$16,186	2800	3xLCD (1.3")
Sanyo PLCXP21	\$16,500	2500	3xLCD (1.3")
Sharp PGC30XE	\$16,640	1700	3xLCD (0.9")
Toshiba TLP-X20	\$17,710	2400	3xLCD (1.3")
Sony VPL-PX31	\$18,150	2800	3xLCD (1.3")
Toshiba TLP-X21 (with document camera)	\$18,645	2400	3xLCD (1.3")
Epson EMP-7700	\$18,700	3000	3xLCD (1.3")
Sharp XGNV6XE	\$19,249	2200	3xLCD (1.3")
Panasonic PT-L6500E/EL	\$19,995	3600	3xLCD (1.3")
InFocus LitePro LP930	\$20,020	3200	3xLCD (1.3")
Sharp XGP10XE	\$20,400	3000	3xLCD (1.3")
Sony VPL-FX50	\$26,000	3500	3xLCD (1.3")
Epson EMP-8150	\$28,500	3200	3xLCD (1.3")

**Portables (SXGA 1280x1024 Native Resolution)**

ITEM	RRP	ANSI	Engine
JVC DLA-G3010Z	\$17,000	1500	3xD-ILA (0.9")
JVC DLA-M2000L	\$34,540	2000	3xD-ILA (0.9")

\* The JVC D-ILA chip is actually 1365x1024 pixels in size

Toshiba projectors feature the industries only projector with a fully integrated high-resolution document camera. Commencing with the TLP-471, a true 1200 ANSI Lumen SVGA projector weighing only 4.4 kg including camera and Automatic Digital Keystone-Correction. Put an end to passing documents around the room with the fully integrated document camera and light allowing you to adapt "on-the fly" by instantly presenting documents, ideas and even objects in 3D. Switch on the overlay feature and by drawing on a white background under the document camera you can highlight selected areas of your projected image such an Excel worksheet. Inputs include S-video, RGB, Composite video and audio. Outputs include audio and RGB.

• \$10,010

**Toshiba TLP-671**

The TLP-671 is the projector with an integral document camera other manufacturers wish they had. Offering a true 1300 ANSI lumens of brightness in XGA resolution weighing in at just 4.4 Kg. Featuring Automatic Digital Keystone Correction, easy to follow menu controls and a full remote control including mouse remote. Just swing up the arm with it's inbuilt light and 3D document camera for presenting written documents, sketched notes, ideas and even objects in 3D. The camera overlay function allows you to draw on a white sheet and will overlay the drawn image over the projected image making it ideal for highlighting data. The TLP-671 offers the ultimate in performance and flexibility.

• \$13,475

**Toshiba TLP-X20 and**

**TLP-X21 (with document camera)**

The flagship of Toshiba's portable projector range is the X20 & X21 featuring a true 2400 ANSI lumens brightness in XGA resolution. Toshiba's X-20 (5.1Kg) and X-21 (5.9 kg) retain the compact size without sacrificing the important features such as Automatic Digital Keystone-Correction, full remote control, mouse remote and RGB input, digital RGB via DVI input, S-video input, audio input and RGB output. The memory card slot makes presentations without the necessity of a PC a breeze. Impress upon your audience with the X21 and the integral document camera with 1.45 million pixels delivers superior projection of documents, catalogues, fine print and even three-dimensional objects. The document camera allows you to adapt to our audience and provide clear and concise projection of printed material at the press of a button.

• TLP-X20 \$17,710 / TLP-X21 \$18,645.00

**ViewSonic PJ1060**

The PJ1060 features picture-in-picture for an enhanced viewing experience, and digital keystone correction so you can square the picture at almost any angle. True XGA 1024x768 resolution, compressed SXGA 1280x1024 resolution, professional-level 2000 lumens, three-panel LCD optical engine, digital keystone correction. Picture in picture capability and auto tuning, portable and compact-weighs only 13.2pounds with the footprint of a notebook computer. Industry leading 24/7 customer support. The addition of a ViewSonic wide-angle lens or long throw lens allows you to use the projector in rear screen applications or to produce great images from a long distance.

• \$13,204

**ViewSonic PJ860**

Weights 13.2 pounds. Producing a brilliant 1850 lumens, the extremely bright PJ860 projector outshines others in price range. In addition to many other features, such as image freeze and magnify, this projector offers exceptional picture quality, as well as advanced compression to run at the maximum resolution of 1024x768. With a wireless remote including a built-in mouse and laser pointer. True SVGA 800 x 600 resolution, compressed XGA 1024x768 resolution, professional-level 1850 lumens, three Panel LCD Optical Engine. Picture-In-Picture Capability, ViewSonic picture Quality and Digital Keystone Correction.

• \$9,359



Toshiba TLP-X20

Toshiba TLP-X21

PROJECTOR MAGAZINE

# EVID™

EV INNOVATIVE DESIGN

DESIGNED TO FIT IN  
ENGINEERED TO PERFORM

## PREMIUM SURFACE MOUNT SPEAKER SYSTEM

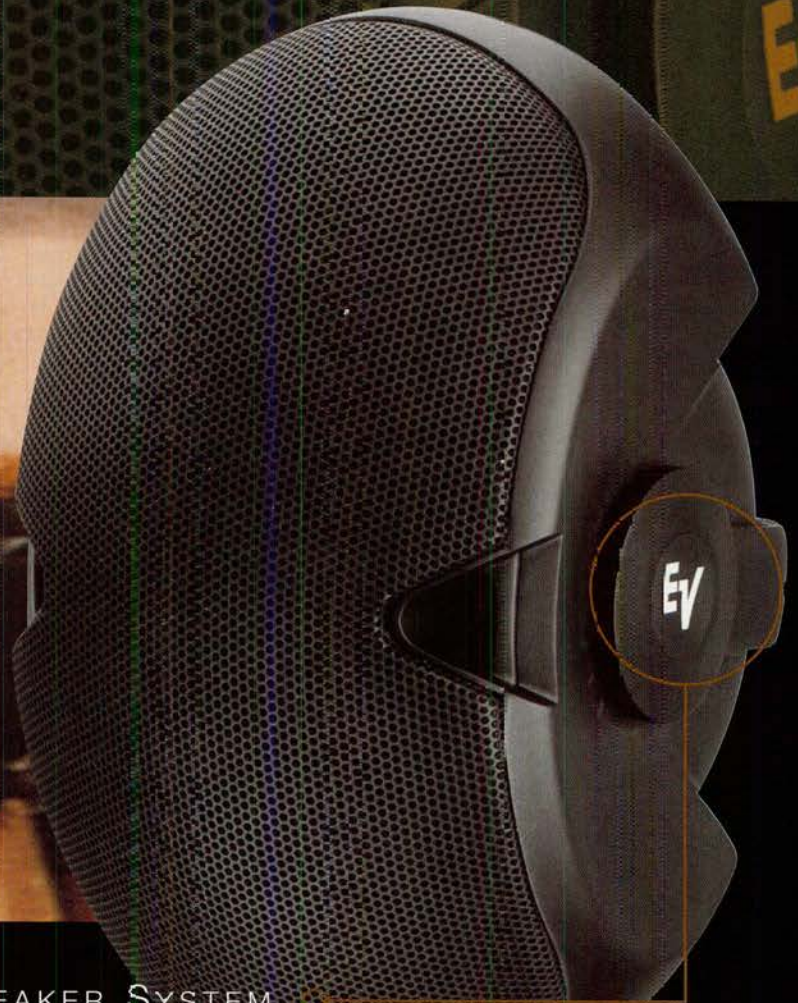
In designing EVID, we evaluated all the current products available and asked contractors and typical end users, "What do you want?"

End users wanted something attractive and superior sounding amidst a world of plain black boxes. Contractors wanted a comprehensive line that would provide flexible choices for easier system design and installations.

We took your answers back to the speaker lab. And we listened.

With EVID, we have achieved these goals. The result is a comprehensive background/foreground speaker line with the key characteristics installers NEED and users WANT.

### WHY SETTLE FOR ANYTHING ELSE?



- 1 **Dual Woofers** for extended bass, greater power handling and output
- 2 **Coherent Coverage Waveguide Horn** design on models 4.2 and 6.2
- 3 **Dual Low Frequency Ports** provide extended bass output
- 4 **Treated Woofer Cones** for added weather resistance and increased reliability
- 5 **Durable Zinc-plated Steel Grille**
- 6 **Cast Aluminium Strong-Arm-Mount™ (SAM™)** system provides excellent strength and reliability
- 7 **Over 100-degrees of swing and 45-degrees of rotation** for incredible installation flexibility
- 8 **Simple Keyed Hex Head Adjustments** make installations quick and easy
- 9 **Titanium Dome Tweeters with Neodymium Magnet** structures provide clean highs and added weather resistance
- 10 **One-piece ABS Cabinet** provides outstanding strength and acoustic rigidity
- 11 **Smooth Lines and Innovative Cosmetic Design** complement any décor or environment
- 12 **(1,9) Magnetically Shielded Transducers** allow placement close to sensitive equipment

For more information or your nearest Electro-Voice dealer contact EVI Audio (Aust) Pty Ltd

Head Office: Tel: 02 9648 3455 Fax: 02 9648 5585 Email: sales@eviaudio.com.au

In Victoria: Tel: 03 9796 7777 Fax: 03 9796 0861 Email: vic-sales@eviaudio.com.au

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



EVI Audio (Aust) Pty Ltd is a division of Tele-Communications, Inc.

*Mixers for Commercial Installation*



Mackie 1402 VLZ PRO

**Audio Telex TX8000**

The Audio Telex TX8000 features 6 balanced, dual microphone (XLR)/line (RCA) inputs and two dedicated microphone inputs (channel 6 auxiliary input is internally adjustable for high level CD inputs). Separate bass & treble EQ for each channel, master gain control, balanced output (XLR), headphone output, tape recorder output and phantom power on all microphone inputs and AC/DC operation. A compact 1RU high, rack mountable or self standing unit, the TX8000 has two optional plug-in muting modules, TX3010 which automatically mutes all other channels, from channel 1 or TX3014 which mutes inputs 2 to 8 from channel 1 and 3 to 8 from channel 2.

- TX8000 \$620
- Audio Telex + 61 2 9647 1411

**Audio Telex TX8201**

**HOT SELLER**

The TX8201 is Audio Telex's most popular mixer. It is a 1RU combined 8 channel Stereo Mixer and Line Driver with 6 universal balanced microphone or line (XLR) Inputs. The unit can operate as a conventional stereo mixer providing 6 mono mic/aux inputs, two dedicated stereo auxiliary inputs, L & R balanced outputs, stereo headphone and tape recorder outputs. Phantom power to all XLR inputs is selectable per channel by means of an internal clip switch. Other features include: built-in 4 tone generator with Bell-Pre-announce, Evacuate and Alert: Voice Operated, (VOX) muting function which mutes 3-8 from inputs 1 or 2. Six outputs (TRS) and two (XLR) have internal links enabling the installer to choose whether the direct outputs are used separately, combined with a mixed output, or both. The TX8201 is popular in AV applications where the EQ per channel and direct outputs suited to complex installations.

- TX8201 \$790
- Audio Telex + 61 2 9647 1411



Peak PDM 102

**Crest MM623**

The MM623 offers 6 microphone inputs, 2 selectable stereo inputs, and buss assignment, phantom power, remote master, Left, Right and Aux outputs. Inputs and outputs are electronically balanced; EQ is performed by an active, 4-Band, fixed frequency stereo EQ; 3.5-segment LED meters and all microphone inputs have a switchable phantom and a 20dB pad. Channel 1 has a variable threshold for ducking all other inputs.

The unit can also be set as a master or slave and all audio and control busses are linkable. All connections are offered on Euro connectors, all in 1RU.

- \$2,370
- Production Audio Services +61 3 9415 1585

**Crest AM811**

The Crest AM-811 is a high-quality automatic mixer with eight transformer-balanced mic/line inputs. Each channel provides a gain control, 48V phantom power (mic inputs), low cut filter, activity/clipping LED, an aux send control and a choice between manual or automatic operation. Master section controls include gain, trim, three 1/9 octave sweepable notch filters, a downward expander, transformer-balanced outputs (main and aux) & remote volume connections.

The AM-811 has been designed to easily link mul-

tiples together to form a single mixer with many more inputs (16, 24, 32...).

- AM-811 \$4,295
- Production Audio Services +61 3 9415 1585

**Crest MA150**

The Crest MA-540 is a five-channel mixing system with assignment capability to four independent powered zones. Each channel offers low and high equalization, channel level control, signal presence LED, 48 Volt phantom power and zone assignment switching. Channels 1 and 2 offer low-Z (XLR) and detachable screw terminal microphone inputs (high and low-z) for paging capability with channels 3 through 5 offering dual (paralleled) RCA jacks and detachable screw terminal inputs (high and low-z) for use with various music sources. Additionally, channels 1 and 2 have recessed screwdriver controls for background music "ducking" threshold and hold-time adjustments.

- \$3,942
- Production Audio Services +61 3 9415 1585

**Mackie 1202 VLZ PRO**

12x2x1, 4 mic/line channels with XDR preamps, 4 stereo line channels, 3-Band EQ, 2 Aux sends, 75Hz Low Cut Filter, Alt stereo buss, Switchable AFL/PFL Solo, Control Room/Phones Matrix, EFX to monitor, Phantom pwr, built-in power supply, rack-mountable.

- \$1995
- Australian Audio Supplies + 6 2 4388 4666

**Mackie 1402 VLZ PRO**

14x2x1, 6 mic/line channels with XDR preamps, 4 stereo line channels, 3-Band EQ, 2 Aux sends, 60mm logarithmic faders, 75Hz Low Cut Filter, Alt stereo buss, Switchable AFL/PFL Solo, Control Room/Phones Matrix, EFX to monitor, Phantom power, built-in power supply, rack-mountable.

- \$1795
- Australian Audio Supplies + 6 2 4388 4666

**Mackie 1642 VLZ PRO**

16x4x2, 16 channels (8 mic/line, 2 mic/stereo line, and 2 stereo line), 10 studio-grade XDR preamps, 4 sub busses, 3-Band EQ with swept mids on mono channels, 4-Band on stereo line channels, 4 Aux sends, 4 stereo Aux returns, 60mm logarithmic faders, Control Room/Phones Matrix, Phantom power, built-in power supply, rack-mountable.

- \$2695
- Australian Audio Supplies + 6 2 4388 4666

**Mackie 1604 VLZ PRO**

16x4x2, 16 mic/line channels, 16 studio-grade XDR preamps, 3-Band EQ with swept mids, 6 Aux sends, 4 stereo Aux returns, 8 direct outs, 60mm logarithmic faders, Control Room/Phones Matrix, Phantom power, built-in power supply, Rotatable I/O allows 5 different physical configurations, rack-mountable.

- \$3495
- Australian Audio Supplies + 6 2 4388 4666

**Peak PDM Series, MP-184 & MPA-184**

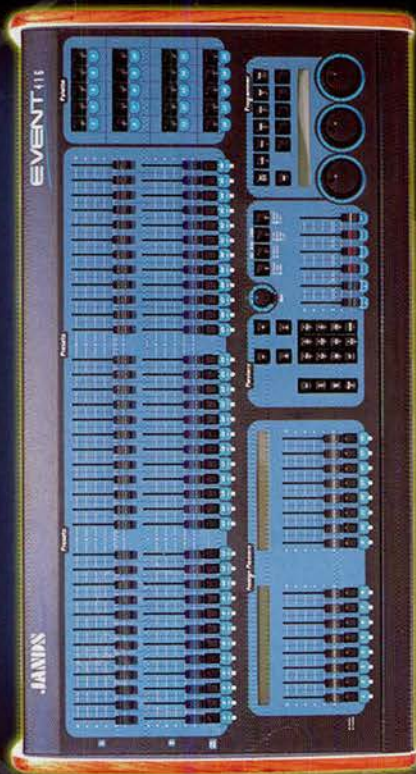
Peak Audio has four consoles in their stable with more in the development stage. Peak PDM Mixing Consoles are an inexpensive option for the many basic requirements such as school & church installations.

The Peak MP Series mixing consoles are packed with superior features for live musicians or home recording studio users, at incredible value for money. The MP series feature Muting, Solo and PFL on all input channels, sweepable mids on mono channels, compulsory features for todays mixing environments.

# Evolution

Introducing the next stage in compact, affordable lighting control from Jands - the Event 4. Like its predecessor, it has full-featured 2 preset manual control coupled with advanced memory and playback functions, but now includes all the necessary controls and options to select, manipulate and operate almost any automated lighting instrument.

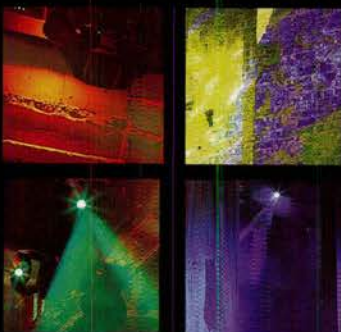
The Event 4 features an intuitive user interface, ease of operation and a long list of essential programming and playback tools including:



- Multi-purpose Palette with 20 buttons to record and select fixtures, groups, positions, colours and beam parameters.
- An effects processor to generate circles, squares, spirals, balls and other position effects.
- Fan functions for intensity, position, colour and beam.
- A programming section including 3 rotary encoder wheels and contextual soft-buttons.
- Channel faders and flash buttons.
- Assign faders and flash buttons for playback of memories, chases and stacks.
- All-inclusive master faders and controls including snapshot and inhibit.
- MIDI and time code control options.
- Connections for a monitor, keyboard and desk lights.

For more information please call Jands Electronics on +61 2 9582 0909 or please visit [www.jands.com.au](http://www.jands.com.au)

**evolution** (e va loo' shan) 1. The gradual development of something into a more complex or better form 2. The theoretical process by which all species develop from earlier forms of life 3. The natural or artificially induced process by which new and different organisms develop as a result of changes in genetic material 4. The



**JANDS** Electronics  
40 Kent Road Mascot Australia 2020  
Phone: +61 2 9582 0909 Fax: +61 2 9582 0999  
[www.jands.com.au](http://www.jands.com.au)

## Consoles for the Studio

Shure SCM262



Advanced workmanship, compact size, ergonomic handles (removable), standard rack mount ears & a detachable solid slide-on cover are some of the features on these sonically brilliant mixing consoles.

- PDM-82 \$ 499 / PDM-102 \$ 669
- MP-184 \$ 1,395 / MPA-184 \$ 2,195
- Central Musical Instruments +61 3 9315 2244

### Shure SCM262

The SCM262 is a compact, rack width mic/line stereo mixer suitable for restaurants, bars, aerobic systems or A/V rental, and office/factory paging. Included are two balanced microphone inputs with switchable phantom power (input 2 can be microphone or line), three RCA stereo inputs, balanced mic/line stereo outputs plus RCA stereo outputs and master bass and treble controls. The unit also includes an internal power supply and several dip switch configurable 'tricks' such as page ducking and jukebox override of other music sources. Rack mount and shelf mount hardware included.

- \$935
- Jands Electronics + 61 2 9582 0909

### Shure SCM268

A compact rack width mic/line mono mixer suitable for meeting rooms, churches, schools, A/V rental, and office/factory paging. Features four transformer balanced microphone inputs with switchable phantom power (or four RCA mono line inputs), one RCA mono aux input, balanced mic/line mono output plus RCA mono output and LED level meter. Also includes internal power supply. Rack mount and shelf mount hardware included. Can be installed side by side with other Shure electronic equipment such as the SCM262.

- \$1045
- Jands Electronics + 61 2 9582 0909

### Shure SCM410

The SCM410A is a 4 Input Mono Automatic Mixer with EQ on all channels, and Shure's Intellimix auto mixer circuitry, allowing automatic gating from any microphone or line source. Full access to all logic functions makes this unit very flexible in many differing applications.

- \$3095
- Jands Electronics + 61 2 9582 0909

### Shure SCM810

An 8 Input Mono Automatic Mixer with EQ on all channels plus Shure's Intellimix auto mixer circuitry which allows automatic gating from any microphone or line source. Full access to all logic functions makes this unit very flexible in many differing applications. Also available in non-automatic model SCM800.

- \$5295
- Jands Electronics + 61 2 9582 0909

### Rane MLM82A

A 1RU mic/line stereo mixer suitable for meeting rooms, churches, schools, and A/V rental. The MLM82A studio-grade specifications also make it useful for submixing, recording and post production. Features four balanced mic/line inputs with switchable phantom power, four balanced stereo line inputs and two balanced mic/line outputs. Input and output signal present/overload indication is also provided. External power supply helps reduce noise floor for studio use.

- \$1665
- Jands Electronics + 61 2 9582 0909

### Rane MLM103

The MLM103 is a 3RU mic/line left-centre-right mixer suitable for auditoriums, conference rooms, churches, schools, clubs etc. Features six balanced mic/line inputs with switchable phantom power and balanced line direct outputs plus two balanced stereo line inputs. Each input can be independently routed to any or all of three balanced line outputs using front panel push-buttons - great for L-C-R PA systems or room combine systems. Each input channel has a 3-Band EQ and OL LED. Also included is a security cover that leaves only level controls

exposed if required. Internal power supply.

- \$3295
- Jands Electronics + 61 2 9582 0909

### Rane RAN-SRM66

Programmable Splitter/Router/Mixer: 6 Inputs, Split, Route or Mix to 6 Outputs, SR1 Smart Remote Control, Limiters on all outputs, 6 VCA groups to allow for room combining applications.

- \$3195
- Jands Electronics + 61 2 9582 0909

### Rane RAN-SM82

Stereo Mixer: 18 Line Level (9 Stereo) Inputs, L&R and Aux Outputs in a 1 unit rackspace! Ideal for keyboard submixes or any situation where you need to mix a number of stereo line sources.

- \$1995
- Jands Electronics + 61 2 9582 0909

### Yamaha MV800

8 mono + Stereo two zone 2RU rack mount mixer with features designed to simplify commercial installations. Mono channels feature 2-Band EQ, level, gain, noise gate, and zone assignment, metering and individual phantom power. XLR & TRS connectors and Euro-block connections allow for a variety of installation options. Master compressor and paging input create a complete system.

- \$1,695
- Yamaha Music Australia +61 3 9693 5111

### Yamaha MV12/6

Designed for commercial installations, the MV12/6 has Euro-block connectors as well as XLR & TRS jacks and a connector panel that can be top or rear mounted with integral rack ears. Mix features and layout are equivalent to the MX12/6 mixer, including upgraded effects and a 7-band stereo graphic equalizer. Lamp socket and protective cover mounting points are also provided.

- \$1,495
- Yamaha Music Australia +61 3 9693 5111

## Consoles For The Studio

### Allen & Heath MixWizard 16:2DX

The 16:2DX is a 16 Mono Input Desk Top or Rack Mount Mixer, Left/Right/Mono Outputs, Digital FX, 6 Auxiliary Sends, 4-Band EQ with 2 Mid Sweeps, 2 Stereo Returns, 100mm Faders, Direct Outs, Vertical Individual PCB Construction.

- \$3,595
- Technical Audio Group + 61 2 9810 5300

### Allen & Heath Mix Wizard 14:4:2+

16 Mono Input Desk Top or Rack Mount Mixer, L/R/Mono Outputs, 6 Auxiliary Sends, 4-Band EQ with 2 Mid Sweeps, 2 Stereo Returns, 100mm Faders, Direct Outs, Vertical Individual PCB Construction.

- \$3,795
- Technical Audio Group + 61 2 9810 5300



Yamaha MV12/6

Yamaha MV800

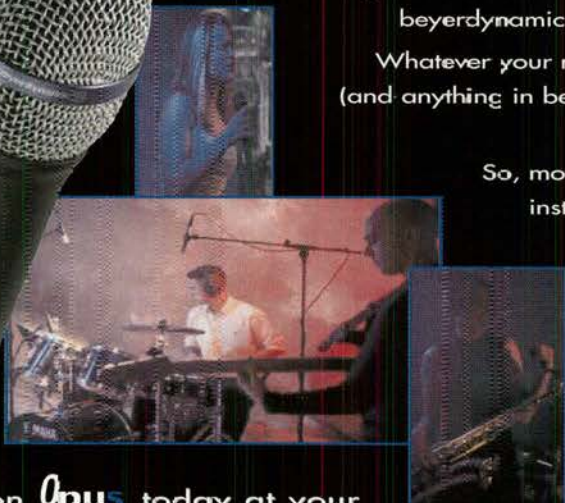


# NEW POWER IN ACTION!

# Opus™



Opus is a new range of powerful microphones and wireless systems from beyerdynamic, the world leader in advanced microphone technology. Whatever your musical prowess, from Bach to Rock, Jazz, Funk or Soul (and anything in between...) Opus offers microphones destined to perform for you no matter what! So, move your career ahead with Opus, a range of vocal and instrumental microphones designed to give you a powerful performance every time!



Audition Opus today at your local dealer and see what real POWER is about!



The Opus range.



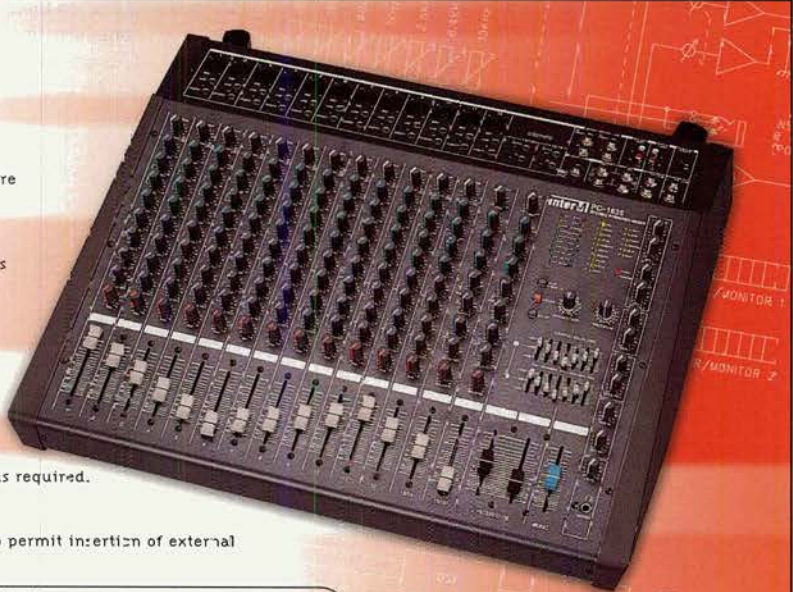
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- Mono Input Insert**  
To use external effect processor conveniently insert jacks are provided in each mono input
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The graphic EQ has 7 linear controls with centre frequencies of 63Hz, 160Hz, 400Hz, 1KHz, 2.5KHz, 6.4KHz and 15KHz. Each control permits 2dB boost or cut
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Phantom power is provided at each mono input channel for condenser microphones.
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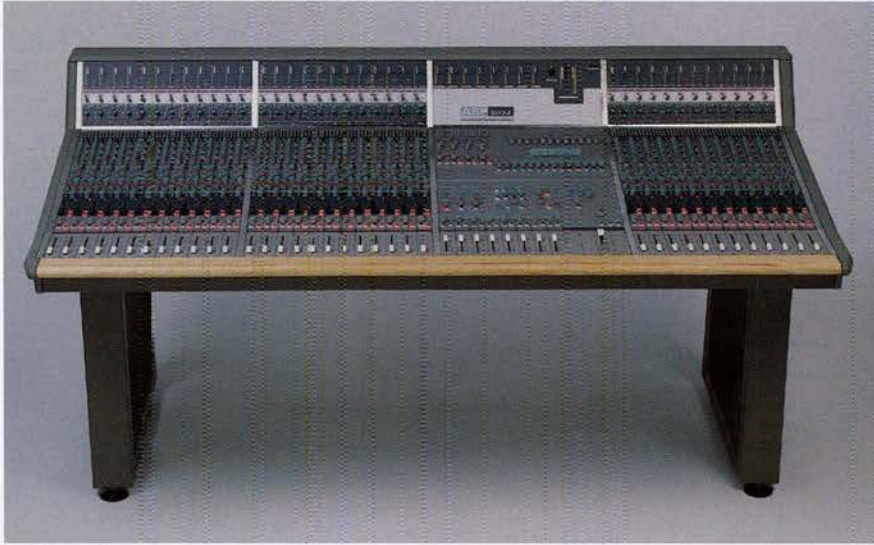


SPECIFICATIONS (0dB = 0.775Vrms)			
Rated Output (1KHz, 0.5% THD)	500W, 4Ω Per channel	EIN	-123dB
Maximum Voltage Gain		Residual Noise (only master fader max)	-77dB
CH in to PFE G=Q/MON/EFX OLT	34dB	Crosstalk (at 1KHz)	-70dB
Stereo CH in to PRE GEQ CUT	34dB	Power Source	AC 110V-240V, 50/60Hz
AUX Return to PRE GEQ CUT	30dB	Power Consumption	720W
THD (20Hz - 20KHz)	0.1%	Weight	30kg
Frequency Response (+1/-2dB)	20Hz-30KHz	Dimensions mm	702W x 175H x 510D
CH EQ Control High, Mid, Low (12K, 2.5K, 8KHz)	±15dB		

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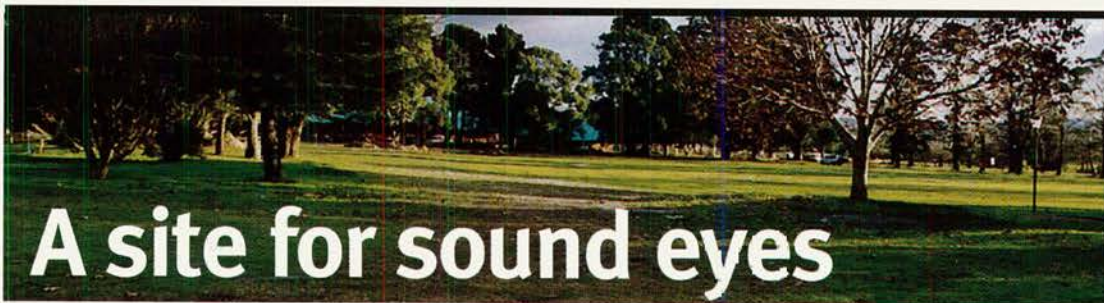
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**For further information, contact Karen Johnson, Marketing Manager, or why not come and see the site in action at the Australian Springtime Flora Festival, 5 - 9 September.**



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# SGM Giotto: Silence Is Golden

SGM's Giotto250 is relatively new to the ranks of the small moving light. However this device boasts some features with may see it widely adopted. Connections had the opportunity to have a close look at one of the units...

by John Grimshaw



As moving head fixtures go, SGM's Giotto 250 has the typical looks and style that we all come to associate with genre. Feature-wise, the lamp has a considerable range of options that the user can control – as indicated by the 22 channels of DMX required to control the unit.

The physical features include a nine-position dichroic colour wheel, an eight-position rotatable/indexable gobo wheel, a seven-position fixed gobo wheel (factory loaded with 3 colours, 2 gobos and 2 prisms), an iris, shutter/strobe/mechanical dimmer, mechanical frost, two separate rotatable prism effects, 9-24deg zoom lens and focus lens.

On the software side, the Giotto has a few nifty little additions. One of these software options is that both the pan and tilt limits can be reduced if the entire range of movement is not required. Other options include reversing the pan and/or tilt movement - to allow units that are installed opposite each other to move

logically, and Pan/Tilt inversion to make pan data control tilt movement and vice versa – for units mounted sideways to move logically.

The inner-working behind the front cowl are very easy to get to and work with. Once the front plastic cowl is removed (allen key required), it is a simple matter to then flip the inner skeleton down to reveal the gobos and colours. Doing this also reveals the 250W MSD lamp for changing if required.

By far, one of the best attributes of this device is the lack of noise made by the unit. As the lamp housing is primarily cooled using heat-sinks rather than a fan, the only noise that emanates from the unit is the sound of the motors when it moves. There are many venues (particularly theatres) out there that have held off from investing or hiring moving lights purely because of the noise factor, which should make this unit tempting to look at.

It should be noted that in cases of potential overheating, a cooling fan does activate. We were not able to cause this to happen and test the additional noise level.

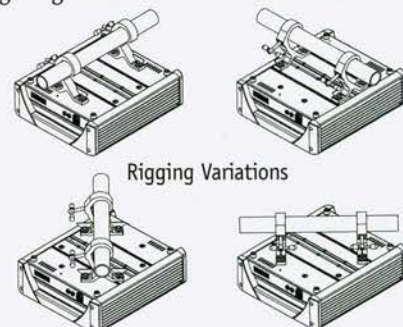
At the business end of the fixture, we found that the light output was surprisingly punchy for a low wattage unit. Colour saturation was excellent for each of the dichroic colours. It was quite responsive to DMX commands, with only minimal lag during large movements of the head.

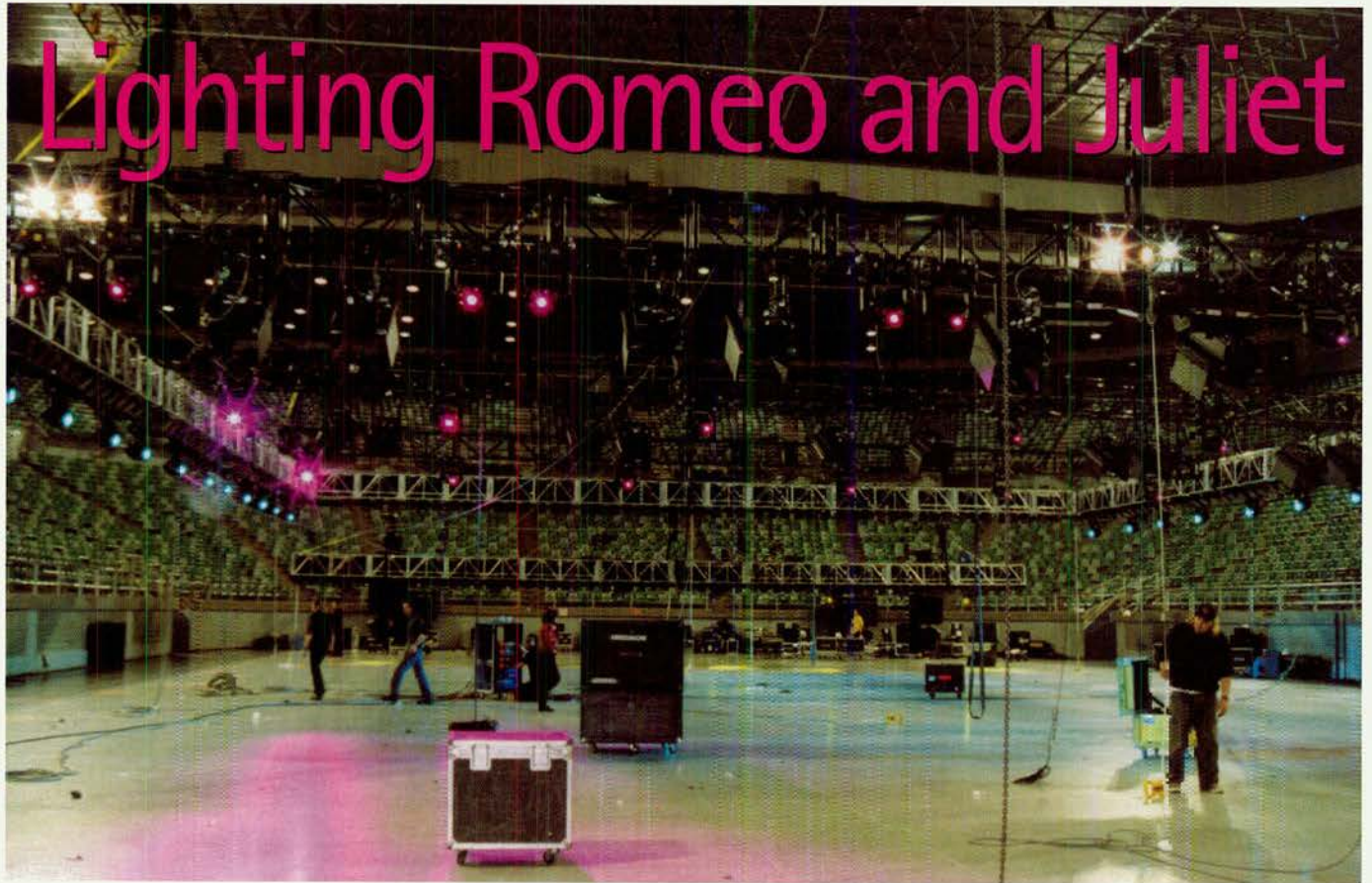
SGM are about to ship a 400W version of the Giotto, which will look identical to the 250. The 400 uses an MSR lamp, different reflector, slightly modified electronic ballast, improved heat dissipation and beefed up engineering for the lens mounting and control. ULA tell us that this new unit will still be as silent as the 250 – making this unit a very interesting fixture for numerous applications. They also say that the light output has been measured at 2.5 times the output if the 250.

When rigging the device, the clamps can be positioned to allow hanging of the base in 45deg increments. The 45deg can be very useful to make sure that your entire rig is facing the right way, regardless of the positioning of the pipe.

In conclusion, this lamp does have a very good set of features to justify the \$10,800 rrp (inc GST) price tag. It certainly will not be surprising to see it start to appear in numerous venues around the country.

SGM is distributed in Australia by Universal Lighting and Audio - +61 7 5510 1333.





# Lighting Romeo and Juliet

**R**omeo and Juliet is the latest arena spectacular ballet to hit Australia. Following the success of Swan Lake in 1995, Edgley International and the English National Ballet have teamed up once again to deliver grand scale ballet to the sporting arenas of Australia's capital cities.

Based on the famous Royal Albert Hall staging, the production features 140 performers on a dancefloor four times the size of a traditional proscenium stage. An enormous castle set designed by Italian theatre and ballet designer Roberta Guidi di Bagno dominates the arena floor, firmly establishing the theatricality of the space.

The original lighting design for Romeo and Juliet in the Royal Albert Hall was by British L.D., Howard Harrison. When Howard was unavailable for the Australian arena tour, Australian Lighting Designer Keith Tucker was approached to re-design the show for arena venues. Keith is the Director of technical design company Megafun, based in Melbourne. The company has two core elements. One is the production management and technical design for festivals, events, and large scale productions. The other is creative and technical design of education-based interactive technology exhibitions for kids. Keith has had a long association with Edgley's, designing lighting for a number of Edgley productions including the St Petersburg Ballet,

the Moscow Circus and the ANZAC Military Tattoo.

Keith describes the Romeo and Juliet rig as "big by necessity" in order to give the coverage needed for the 24m x 21m dancefloor. Supplied by Bytecraft, the rig comprises 450 conventionals and 92 intelligent fixtures.

"Most of the conventionals are par cans in a three colour wash - apricot, daylight blue and colour correction blue. There's also a lot of 90° Source Fours which are dedicated to an external cobble stone effect. One of the problems which we had always anticipated in these venues was the amount of space between the dancefloor and the arena walls. So we dedicated a range of lanterns to produce a cobble effect that goes around the edge of the floor to fill in the space and create a pathway around the floor. We also use Source Fours for a couple of specials, and all the sidelighting."

Keith explains one of the key's to his design was the '8-liters'.

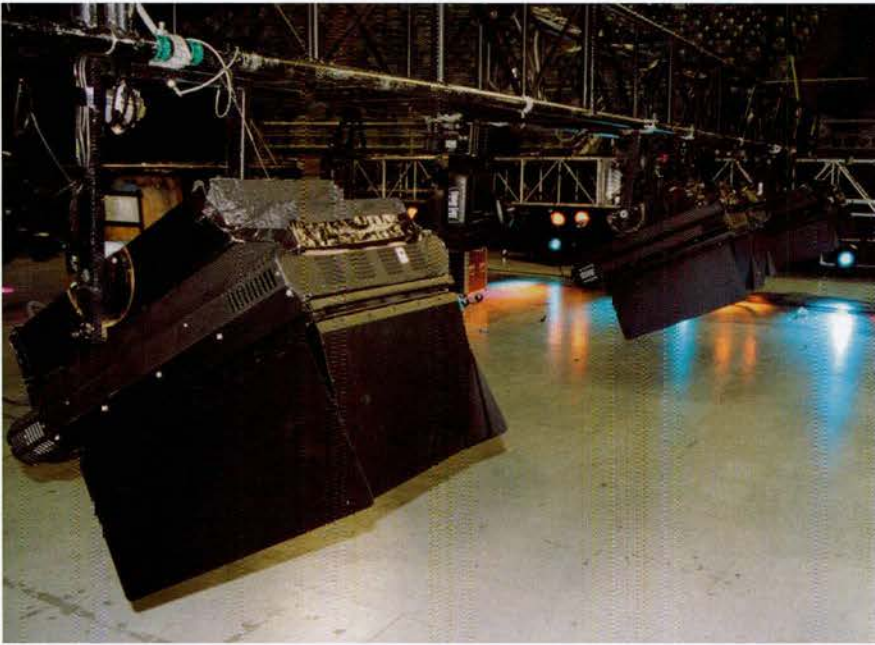
"Twenty 3-liters at roughly 5k each is an enormous amount of light, but it's also a very big area I'm trying to cover, so I use them to provide the base

by Mandy Jcres

The Fight Scene



## Arena Sized Theatre



8Lites' with the Wybron colour scrollers waiting to be flown. This picture also shows the custom-made barndoo's used on the fittings.

colour to provide the base sense of atmosphere for any state. They've got Wybron scrollers on them with 18 colours. We only needed 10 units to get the coverage but I've had the nasty experience before of always having to flip six or seven colours to get to the next cue and I knew in this we'd never be able to justify that or risk going through a blackout to do it. So I specified two sets of 10, so we can do one full colour coverage with one set, and then do a crossfade straight to the other with no [visible] colour change at all, while the other ones are changing colour for the next cue. It has worked very well and the Wybron's have been remarkably reliable. And of course there have been a couple

of situations where I wanted more light and we've ended up using all 20 in one colour".

The remainder of the rig is made up of High End gear, predominantly Cyberlight Turbos, Studio Colors, Studio Spots and a few standard Cyberlights.

"You only ever see the movers move once for a particular effect so they're very much being used as relocatable conventionals. Mostly I'm using them for dekkel coverages and specials which gives me the flexibility of creating effects like the entire floor being covered with cobblestones for the market scenes which we can achieve with the Studio Spot coverage. Then in an 'outside the castle at night' scene there's a moonlit dekkel cover, so I'm able to use the same units to achieve that result. Arguably you could do the entire rig with conventionals because I don't use the movement, but you would have a rig three or four times the size because you would have so many individual lamps dedicated to specific coverages.

"The Cybers and the Studios Spots are what get the most hammering. The Studio Colors are a fill really, I'm using them for cross-wash for general fill on the dancefloor. There are six Studio Spots and four Cybers completely dedicated to the set because I was very conscious of making the set work in this environment. We've also got some Cybers on the cyc bar which we use for backlighting through the set which also works well. The set is not the star of the show but it's what you see all night and it has to look powerful and work for the piece. I was conscious of not skimping on it, and it's been a wise choice."



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The other key to Keith's design is his use of sidelight. While posing a challenge in the arena setting where theoretically there isn't a 'side', Keith placed Source Fours around the perimeter of the arena floor. To avoid blinding the audience sitting directly across from the lights, the beams were tightly shuttered, and where glare was still a problem, extra long snouts were made to fit the units.

"It's certainly been worth it because we've been able to get those semi black-theatre effects, like in the stained glass window chapel we've got a glorious stained glass window on the ground generated by two Turbo Cybers so it's very punchy and it works very well, but as soon as you whack anything on top of that so you can see the performer you lose it. I didn't want to use followspots for the same reason so by having these very low sidelights shuttered very hard we were able to get that black-theatre effect. Even from the side it still works so you still get a sense of a glowing human in a black void."

The sidelights are also effective in highlighting the detail of the layered costumes without washing out the overall state.

"It's difficult to light that sort of costume



The Ballroom Scene

particularly as there are a number of scenes like the ballroom scenes where the lighting brief was red, full stop. It had to read as red, so we used all 20 8-liters flat out in primary red. And that's when the sidelights absolutely came into their own because I could

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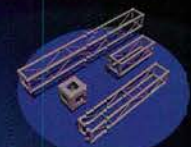


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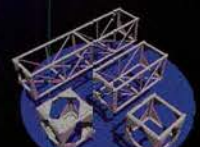
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## Arena Sized Theatre



(above) Motley - a bundle of energy and excitement



introduce a decent coverage of white onto the costumes without affecting anything else. So I was able to get faces and the underlayering of the costumes without affecting the look of the state."

Gobos feature heavily in Keith's design as subtle patterning to add texture, as well as clear images to be read as part of the scene. Around 200 specially designed gobos were manufactured for installation into the individual lamps.

"You don't get a standard leaf break-up in a mover, something you would regard as a standard theatrical gobo because most moving lights are still designed for rock and roll. So I was very keen to introduce effects like that. We designed some window gobos based on the windows from the set and there's a stained glass window for the chapel scene


which works particularly well. Then we had the moon and stars and all the traditional romantic ballet stuff."

Keith is especially happy with the moon and star effects which were more effective than he had imagined. He credits the success of the moon to operator Sean 'Motley' Hackett.

"Motley came up with the idea of using a brick gobo in a Studio Spot and he focused on the iris not on the gobo so we got a way out of focus brick gobo which looks like that 'man in the moon' soft mottle with a very sharp edge and it looks fantastic. When you overlay that with a couple of clouds from some Studio Spots it looks brilliant. For the main balcony scene it's the notional key light for the state so it works well."

Romeo and Juliet is Motley's first time op-

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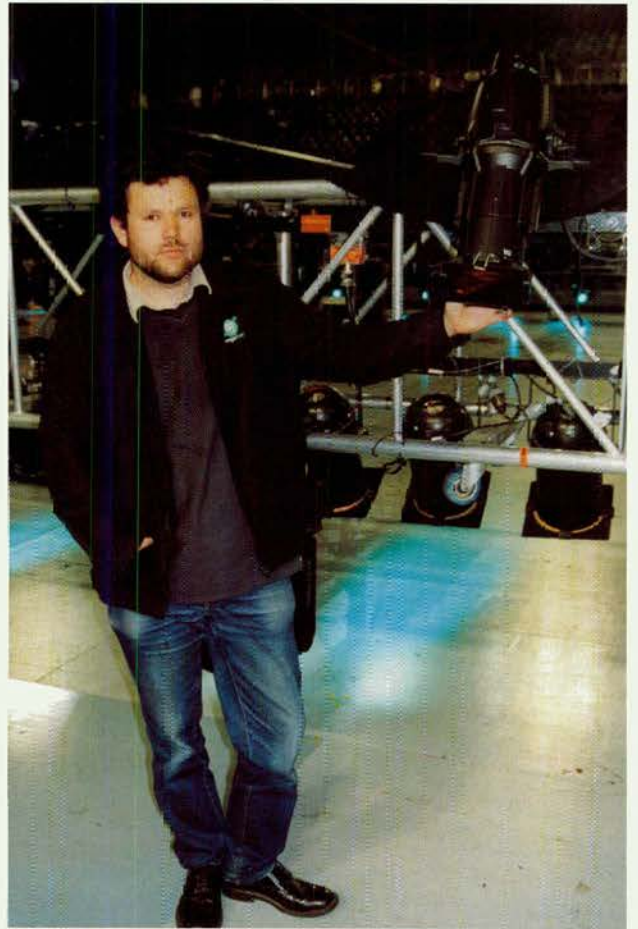
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erating a ballet and according to Keith has done an impressive job.

"Motley is a fantastic board operator who's done rock and roll all his life so this has been very different for him. Initially I think he was surprised at the level of subtlety involved when you're adjusting levels by 10%, but he's been terrific and understands the need for the sharpness and clarity which is just so different to rock and roll. The entire lighting crew have been excellent, I can't fault them."

Show control is split between a Whole Hog II for all the intelligent fixtures, which triggers via MIDI a Hog 1000 used for all the conventionals. Three trucks are required to transport the gear, and it is usually rigged and flown within nine hours and then focused in an additional three.

Having only ever seen a video of the original production filmed from the back of the Albert Hall, re-creating the design of an existing production was an interesting challenge for Keith.

"I was very careful not to copy Howard's lighting and I was always very conscious of that, but on the other hand I needed to respond to what the Choreographer Derek Deane was wanting, so it was a balance of trying to do my own thing while maintaining the original integrity of the work. Howard used a lot more cold lighting than I

have because I found the set doesn't respond terribly well to cold. We tended to use the warmer colours with the intelligent fixtures but it's difficult to get an apricot equivalent out of a discharge lamp. It's very difficult to get a good 132 daylight blue, a 117 steel, 152 pale gold and 153 pale salmon unless you actually put the colours in the litho wheel, which in retrospect I probably should have done. A good medium blue and a good flesh colour for lighting bodies would have been fantastic because they're the hardest ones to achieve out of a discharge lamp.

"If I was going to attack it again, there wouldn't be too much I would change. Overall we tended to go warmer on the whole show than I was imagining we would, and as a result I might have changed one of the wash colours in the par cans. Ideally I would have put in some more rows of Studio Spots to get a better coverage, but apart from that I'm very happy with it."

(above) Lighting Designer Keith Tucker

(left) Dirmer Heaven



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## PROFILE OF A DESIGNER DESIGNER OF A PROFILE



The Pacific by Selecon (New Zealand) has carved an impressive international position in the competitive world of theatrical light fittings. The Pacific is a constantly evolving design, with its most recent developments seeing optical design resulting in a far more efficient fitting than any previous incarnation of the Pacific.

Recently, one of the key people in the evolution of the Pacific was in Australia to help promote the newest Pacific upgrades. Andrew Nichols is the Development Director for Selecon. Connections had the opportunity to get an inside look at how the Pacific was created and where it is going now...

The story of the Pacific started some years ago when Selecon employed a very talented optics engineer by the name of Frank Tornyai. Andrew Nichols wanted to create a new design for a lamp fitting. However, he did not want to re-invent the same wheel that every other fitting manufacturer was doing at the time. After taking a good look at what their opposition was building at the time, this newly formed design team started from a completely clean whiteboard, first identifying what they wanted to achieve. They wanted the new design to have better output, have a cool beam, maximise the life of a lamp, be modular (so that they could build a range of the same type of fitting), be robust, and have a good and reliable colour temperature.

Then they set about trying to achieve these goals. The first step was with the choice of lamp. According to Andrew, they knew they wanted to build a 1000W fitting. Normally, a design for a new fitting starts with choosing a lamp to build the fitting around. Interestingly, the Pacific started with discussions between Philips and Selecon about the design for the 'Blue Pinch' lamp.

"The filament structure determines everything," says Andrew. The shape, size, efficiency and placement of the filament directly effects the shape of the reflector, the size of the lamp housing, the heat dissipation, colour correction and a host of other issues. After several design modifications and three prototypes later, the final lamp design was chosen and Philips set about building the lamp.

With the lamp chosen, the engineers at Selecon began to play with the designs of fittings. One of the first decisions made was to use a 'base down axial' design. At the time, many people would have been aware of the 'base up' design of the Strand Pattern 264. With the 'base down', the Andrew and Frank were able to put some of the most delicate parts of the fitting in the coolest possible position. Things like electrical connections, cables, micro-switches and lamp bases can be easily destroyed by constant and prolonged heat exposure – a problem avoided with this design.

With the optics, there were three major components that required special attention, the main reflector surrounding the lamp, the mirror and the lenses. Each were designed at the same time, yet each had an affect on the design of the other. Computer modelling of the optics enabled Frank to see the paths the light would take on its way out of the virtual fitting. The computer model would trace millions of light paths to show what would result with each change. After a great deal of work, it was time to build the prototype.

There is a great deal that goes into precision lens optics. Selecon sought the help of an Australian living in Hong Kong. Peter Fox and the firm he worked for (Optotec) had German glass precisely finished in China, and then shipped to New Zealand. The first batch of lenses was not at

all successful. However, to Frank's credit, he actually discovered that there would be a problem before these lenses arrived. Changes were made and a second batch of lenses were ordered.

Work on the mirror had to achieve several key results. They had to design a glass panel that would reflect light on wavelengths from Ultra-Violet up to (but not including) Infrared. The IR wavelengths had to pass through the glass and hit a large aluminium heat sink where the heat could be released. The resulting glass mirror is in fact several layers dichroic glass, sandwiched together.

The polished aluminium reflector was carefully designed to make the best of filament design of the lamp. In the end, two separate reflector designs were adopted. To differentiate the two, coloured handles were attached to the lamp housing. Thus the reflectors came to be named Red Shell - for narrow beam fittings, and Blue Shell - for wide beam fittings.

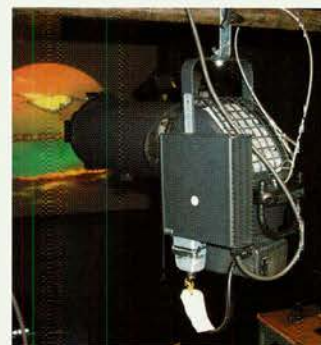
With the exception of the lamp housing, the rest of the fitting was built using modern plastics technology. This was a very innovative step at the time. Andrew was under the impression that no previous manufacturer at

that time had tried to use plastics in this way - the traditional method being to use all metal components. The plastics could be used in this case because the heat dissipation and resulting 'cool beam' light path was expected to be very effective. The plastics also provided other characteristics, including electrical safety, light weight, and cost effective component moulding.

Andrew indicated that the final combination of all of these elements in the one fitting ended up taking more than a year of R&D. It also took more than \$500,000 in various factory tooling before production models began to roll out of the factory in 1998

Initial models were limited to 23-50 and 12-28 Zoom Profiles, using the Philips 1000W 'Blue Pinch'. The continuing evolution of the Pacific subsequently resulted in several new models and variations:

- The 90 degree profile - an amazing innovation that other manufacturers are only now beginning match.
- The MSR 575W (GKV lamp) version - making the most of the lower wattage high output lamp .
- The CDM 75/150 lamp base - creating a relatively low wattage architectural fitting



Selecon Pacific - CDM version with ballast

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## Designing Lights



(εbcvε) The new 5-13 Pacific

(be.ow) The 80V 1200W Pacific with its electronic power supply. Also note the new heat-sink protection grill



with a good output selectable useful colour temperatures of 3000°K or 4200°K.

- The 'Green Shell' reflector – an increased efficiency reflector that was also designed so that the one reflector can be used for all beam angles and lamp types.
- The 5-13 degree zoom – according to Connections' Luminaires Market Report (*May, 2001*), a very narrow angle zoom in this range is not available from any other manufacturer.

The most recent jump in technology is again set to give the rest of the industry a bit of a shake up. Selecon have introduced the 80V 1200W version.

This innovation was again the result of close cooperation with Philips. Selecon asked Philips if there was a more efficient way to produce light output. They wanted to see if there was a way to reach the kind of light output that a conventional 2kW fitting could reach. Philips indicated that if they could use 80V, then they could produce a 1200W fitting that would be quite impressive.

"80V is the platform of the future," says Andrew

It is not hard to see why this could very well be the case. Using an electronic ballast, this fully dimmable system would be easily configurable for any local power supply. A bi-product of this is the convenient bypassing the problems associated with local supply voltage running too high – which is very often the case in many parts of the world.

Combining the two latest innovations allows for very long throw, high output Pacific that has excellent colour temperature characteristics as well as being a fixture that is cheaper in both power consumption and lamp life. The Sydney Opera House is looking to get these fittings for their concert hall – a long throw application where these fittings would be perfect.

So what further developments have Selecon got waiting in the wings? Apparently, they have one prototype waiting for the right project. Using better optics and a larger gate size, Andrew and his design team have built a prototype 5-13 degree zoom that uses the same 80V lamp, but has 80% better light output than the previously mentioned new production model.

In other words, the production version of the Pacific 5-13 zoom has a light output of 2400 lux at 20m (peak output at 5.5°). This prototype would have 4320 lux using the same focus at the same distance. The prototype was an exercise in seeing how far they could push the output by ignoring the constraints of the modular Pacific design.

Another project they are working on is a recessed projector, designed to hide in a ceiling void, this architectural unit would have rotatable gobos, colour control and specialised lens design.

The Selecon team are also looking into a mechanical dowser for the CDM lamp Pacifics that can replicate the control and smoothness of a conventional dimmer.

Andrew says that the whole ethic behind the development of the Pacific and subsequent improvements was the search for the best optical solution to any problem. The fresh start was initially a big risk, but he believes that this approach has now been validated with the wide adoption of the Pacific. He went on to say that his work is driven by a "belief that [he is] doing something important."

He is certainly doing that.

STORY BY JOHN GRIMSHAW



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SUPPLIES

# Lighting Film On A Large Scale

## Panavision Lighting has changed the film industry

By Madeleine Murray

"Australians are notoriously suspicious of anything big, monopolies, and threats to the Aussie lifestyle. Most of the gaffers in town, and production companies were nervous. Would Panavision Lighting put them out of business? Would they drive down prices? Or drive up prices for the film companies?"

In the winter of 1998, motion picture giant, Panavision approached Viking generators and the three largest independent gaffers in Australia with an intriguing offer. Would they be interested in selling their business, trucks, lights and cables, to Panavision, for a hefty sum, "many millions," according to CEO Denis Noonan? Reg Garside, Mick Morris (Mr Lighting) and Simon Lee (Lee Lighting) thought it over, and on March 1, '99

Panavision Lighting Asia Pacific was formed. The die was cast.

March '99 was significant because *MI:2* was coming to Sydney, and was going to suck up all the lights and power in town. The motive behind buying up the independent operators was the changing face of the Australian film industry. Sure, we still made small pics, like *The Boys*, *Proof* and *Muriel's Wedding*.

But now there was a new phenomenon — the \$100,000,000 blockbuster shot at flash new facilities, like Fox. *MI:2*, *The Matrix*, *Star Wars* — we're not talking a few blondies and par cans here, we're talking 2500 amps per phase of power, 20 18kWs on standby, thousands of feet of cable. No one gaffer was able to supply that. So suddenly Australia had a big new multinational lighting company in its midst.

What would happen to the other gaffers?

Australians are notoriously suspicious of anything big, monopolies, and threats to the Aussie lifestyle. Most of the gaffers in town, and production companies were nervous. Would Panavision Lighting put them out of business? Would they drive down prices? Or drive up prices for the film companies?

The first step in consolidating a lighting conglomerate here in Australia came in May 1997, when Panavision Inc. expanded their operation, into the English market. They bought the Samuelson worldwide film group, including Samuelson Film Service, the exclusive Panavision agents for Australia. Sammy's, as it was known, was based in Artarmon, and rented out a range of cameras and lighting equipment.

A year later, the film industry was changing. According to Denis Noonan, CEO of Panavision Asia Pacific, "In '98, we saw a problem developing with large American productions wanting to shoot in Australia, and not being able to access a large lighting company capable of supplying their needs. Up until then, the Australian system was that a gaffer owned a truck full of equipment,

and maybe a bit more on the side. They were trying to service these large American pictures.

"There was a lot of ill feeling about the arms length transaction of the person who owned the gear also ordering the gear, particularly on big American productions. One could imagine that the more lights a gaffer requested to be used, the more lights he in turn was able to charge to the clients. There was a bit of a conflict of interest. We were looking to establish a professional independent supplier of lighting equipment, to

cover those large American productions here and in the Asia Pacific region.

"The local gaffers and industry were concerned at first that perhaps we were looking to monopolise or take over the local industry. The

biggest problem we faced was convincing them that we were not actually a threat but a benefit to them."

### Simon Lee sells

Lee had three fully kitted lighting trucks, two film silent generator trucks, plus a small warehouse of additional equipment.

"I'd been in the industry over 20 years, and I was constantly outlaying more money. An 18kW HMI, which costs me \$50000, would bring in about \$600 a day. I'd have to have a couple of those. They'd stay in vogue for a few years, then another one would come along. I was forking out hundreds of thousands a year to keep abreast of new trends, new lights, and to have the quantity of lights for the projects. And I still never had enough gear.

"When Panavision bought me and my friendly competition out, it meant that we were all being brought together under the one corporate umbrella. I could see the benefits in it. If these films kept on growing at the rate they were, the only way we would be able to service them would be as one big group."

"So how much did they buy you out for?" I asked Lee.

"I'm not prepared to publish that, it was obviously attractive," he said.

An industry insider believes that Panavision may have bought out the three gaffers and Viking for about \$5m, and then spent another



\$5m on buying new lighting equipment.

### Changing the Aussie way of doing business

In early '99, Australia didn't have an international rental operation, like in Europe or US.

"I knew that if we allowed an international rental operation to come in that didn't have any respect for the local market and the local players, we could completely and utterly change the face of this industry, with dire results," Lee said.

"There was no point going head to head with local operators and having a blue with them. We needed to keep an independent owner/operator system that could service the local small budget film productions. We didn't want to go into a local price war and undermine the local gaffers in the commercials. It wouldn't help anyone to drive the standards of the quality of equipment down."

### Contentious

It was a huge change to the way that the industry had operated for 20 years. At first, other gaffers were unhappy, they felt threatened by a big player coming in, and possibly doing a big price war with them.

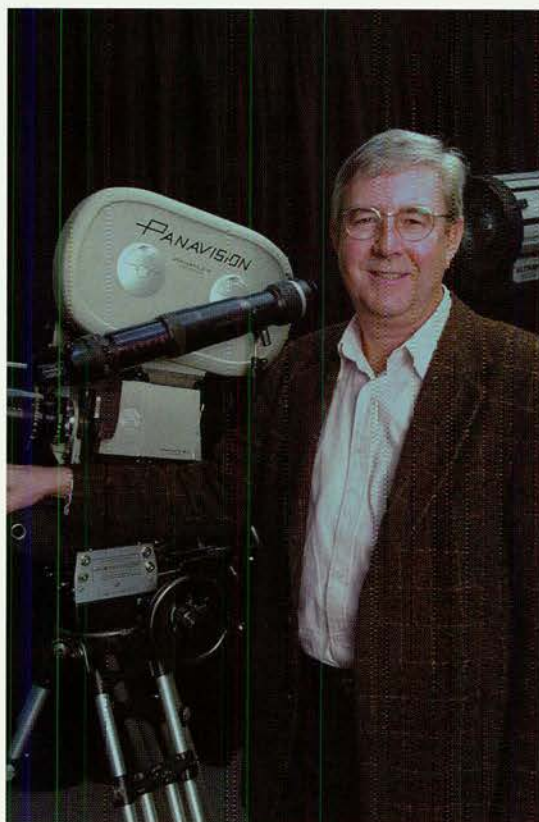
Stephen Carter, who does low budget films such as *Better than Sex*, was nervous when he first heard about the possibility of a big lighting company here.

"In '99, I was a little apprehensive," Carter

said. "There was a lot of buzz, that Panavision Lighting was going to destroy the existing gaffer system, but in reality it hasn't. Panavision Lighting has a wide range of facilities and equipment. It attracts people to Australia, and enhances the Australian reputation.

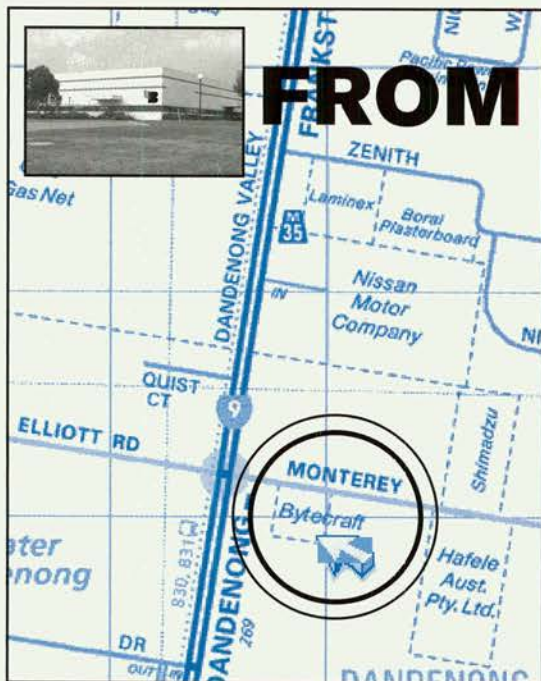
Gaffer Rick McMullen agrees. "Initially I was a bit reticent, but now it's perfect for me. They've got a good service, good backup, they're positioned really well, near Fox. They've brought a massive amount of very expensive equipment for big movies into Australia, things that we didn't have, and wouldn't have gotten."

Panavision Lighting has an array of beam lights, Xenons, 18kWs, 20kWs, skypanes, and one of the biggest dimmer systems for hire, based on Jands dimmer racks.



### The future

For two years now, Panavision Lighting has been the only big lighting operator in Australia. That may soon change, as the film industry here continues to attract big foreign productions. There has been a rumour that the English company AFM (Andy F Martin), who hired gear to *Lord of the Rings* in New Zealand, may come to Australia and get *The Matrix*. Panavision Lighting has tendered for the contract, but it has still not been confirmed.



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# IBM's Centre: AV paradise

*Nice tin saed! AV production suite sits in front of main rack room*

IBM's Centre for e-business Innovation is pure eye candy. But behind the futuristic audio visual is a working site where up to 400 people gather. Julius Gratch went inside ...

IBM have opened a most technically unique complex in Sydney, known as The Centre for e-business Innovation. This heritage classified, historic wool store is a multi-level, open plan, building within a building. It contains virtual and physical multimedia applications, technology and laboratories. It will eventually house over 400 e-business experts who will work side by side with IBM clients in a strategically designed creative environment.

The Centres' environment is based around state-of-the-art technology including complete wireless technology integration.

TCP (Total Concept Projects) won the audio visual implementation contract, worth

over \$3.5 million, and installed the site to a tight timeframe. It is interesting that TCP find themselves working in corporate installations of this kind one day, then nightclubs the next. TCP started as a nightclub supplier in the 1980's, but its founders - Tony Musico and Richard Skarzynski - were soon asked to install audio and vision in hotel ballrooms.

It has grown into a specialist integrator, working across a wide and thin industry where different brands and equipment protocols must all be meshed together seamlessly.

The technical 'smarts' required to win the



Rotating foil - a curved semi translucent screen, with gobo and full image projection. It also has fibre optics within its rib cage.

IBM contract are the result of a continual workbook for the Sydney firm, who also have offices in Brisbane, Melbourne and Kuala Lumpur.

"We got the brief in May 2000", said TCP Director of Sales Peter Guest. "It was an extensive brief to design and construct audio visual systems for a range of research and development labs, and observation test cells".

Observation test cells?

"Yes, where people sit front of a PC and work thru an e commerce solution on a website. In an adjacent room they are monitored on a plasma screen from different camera angles, to see how a person interacts with different sites. This is recorded and handed to a client."

But it's the entrance that captivates, with three Clarity rear project cubes over the reception desk, a Plasma Floor, and eight Clarity cubes over a cafe on the other side. (See the picture at right.) The smell of coffee as you walk in is tempting as well.

Looking into the ground floor is a special feature that sits through a mezzanine to the next level - a rotating foil. "The philosophy is it is done as an air foil, IBMs statement is that they give flight to your ideas", says Peter.

(please turn the page)



The foil had its own design issues and parameters, it is a curved semi translucent screen, with gobo and full image projection. It has fibre optics within its rib cage.

The firm of architects responsible for the centre were Geyer Design.

IBM have a small number of these complexes around the planet, it is part incubator, part ideas showroom, and mainly a fully working facility.

Clients come in with virtually any medium, whether that is a 35mm slide, a text file, SP beta tape, whatever. The ability to plug and play is the key - the centre technicians should be able to open (or digitise)

almost anything. Then the media can be shared collaboratively between any IBM innovation centres anywhere.

This can be done via video conferencing, TCP installed a dual codec system where one codec is for normal duplex video conferencing, and the other codec is for high resolution media share. The video conferencing system, from Tandberg, has three Sony cameras.

Sony supplied all display screens, projectors and Plasma screens.

Here's a nice touch. TCP wired in a Play station input at the café,

so clients and staff can plug in a Play station to view through the cubewall for BIG impact!

The upmarket Tin shed appearance of AV production suite belies its power. "If a particular client comes in, they can brand all the display screens throughout the centre from there. It's like 'mission control'", says Peter.

The complex is full of bid and proposal rooms, mini boardrooms, and semi open spaces. It's wired so anyone can bring in any A-V device.

It boasts a general distribution system all over Cat 5 cable, enabling delivery of full audio visual from any input source in any room to any other room or facility.

Control is done using AMX overlaid on various house software and hardware configurations. The site also has a fairly high number of Apple Mac machines.

There's a number of simple solutions to challenges that arose through the project. An example is a flip over mic design. A Shure MX 392 boundary / desktop mic, sits up on boardroom tables, but can be flipped over flush with the surface when not required, so paperwork or plans can be spread out.

Installing and commissioning was done to an aggressive timetable, says Peter. "We pushed the project timetable pretty heavily with the builder. We made noise, we were not most popular trade on site - but we had a direct contract with IBM, and the opening was set in stone. IBM sent invites to the who's who of the top 500 companies.

The AV component had to work- and it did! IBM have since signed a three year service agreement with TCP. •



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Companies At Work

## Soundfirm THX Certified

After two years of planning and many months of installation work, the latest upgrades to the Sydney facility have been completed. The addition of another Harrison Series 12 automated mixing desk, Fibre Channel RAID and networking infrastructure, and a DSP Media TV mix room has boosted the facilities.

In early June, final THX certification was ratified for two screens at the Fox Screening Rooms facility and one screen at Soundfirm's Film Mix # 1 mixing theatre.

Screening Room 'A' is a 52 seat THX certified preview/rushes theatre with dual 35mm forward/reverse projectors that have the ability for double head digital, Dolby A/SR, Dolby SRD and DTS reproduction for 1:1.85, 1:2.39 & Super 35mm formats. Video replay for PAL/NTSC from SVHS or SP-Beta is also available.

Screening Room 'B' is a 25 seat venue similar to 'A', except with single 35mm projection for reels or platter. The Film Mix Theatre # 1- the largest Film mixing theatre in Australia has 3-way tri-amped JBL speaker systems.

Soundfirm CEO Roger Savage stated, "We chose the JBL 3 way package to achieve a monitoring system that will really equate to listening in a large cinema environment."

"With up to 192 tracks of ProTools, 48 tracks of Tascam 24bit digital recording as well as 16 tracks of 24 bit AKAI recording, the facility can handle any size project, from a cinema commercial through to the most complex of films."

The Film Mix Theatre # 2 also gets a Harrison Series 12 fully automated console to make this room compatible with Film Mix Theatre # 1, at a lower rate for films that have a tighter sound budget.

For further information contact Soundfirm on +613 9645 4522 [www.soundfirm.com.au](http://www.soundfirm.com.au)



Doing a big installation?  
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(Install Snapshot continued over)

## OLYMPIC PERFORMANCE WINS OVER SEVEN

The Seven Network has purchased 3x Euphonix System 5 digital consoles as key components in their all-new Docklands Digital Broadcasting Centre in Melbourne.

Although Network Seven have a long involvement with Euphonix, the decision to go with System 5 was no formality. According to John Hancock, Audio Supervisor HSV Channel 7 Melbourne, "My decision to recommend the System 5 was based not so much on its abilities to service the demands of today's television productions, but more importantly on its ability to meet the needs of the Seven Network over the next ten years. The software up-gradable nature of the System 5, its ability to operate at 96K sampling rate and its ease of creating 5.1 program material, cover most of the major issues that are likely to effect television audio within the next ten years".

Operational simplicity and ease of use were also high on the list of considerations. John Hancock continued, "Not one patch panel or patch cord was used in the entire Olympic System 5 audio system. 'PatchNet'

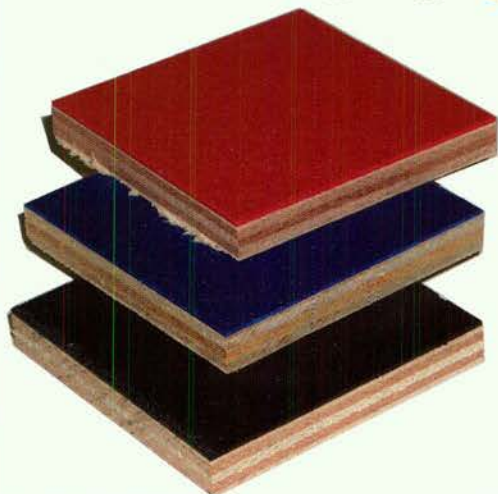
was used to assign inputs to channels and outputs to their correct destination. Once all one hundred and sixty eight inputs were resident on the console, 'Layouts' were used to manage them onto fifty-six faders. One operator could then access all inputs while keeping everything within easy reach. We were expecting a few operator problems - we had none!".

The configuration of the three consoles for installation at Docklands each provide up to 168 inputs, 1:6 outputs and 70 fully featured dual channels within a single processing core. Each multi-format channel offers comprehensive parametric EQ, expander/gate and compressor/Limiter processing plus access to groups and mix stems for easy formatting of Stereo, LCRS, 5.1 and 7.1. With the ability to independently bring or recall any channel and/or groups of channels onto the control surface and the flexibility of 'Snapshots' and 'Snapshot Recall', the console can be setup for major productions within a matter of seconds.

- Euphonix is distributed in Australia by Technical Audio Group +61 2 9810 5300. [www.tag.au.com](http://www.tag.au.com)

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Companies At Work

The Adelaide Convention Centre Chooses Turbosound



As happens, there was a loudspeaker shootout the Adelaide Convention Centre to choose a speaker cabinet for a particular application.

The Adelaide Convention Centre then invested in Turbosound Powered QLight enclosures as they complete the fit-out of their extensions. With these extensions, the area of the centre will more than double in size. The development will offer more than 10,000 square metres of pillarless floor space, (divisible into six soundproofed halls) for exhibitions, banquets, or other events, in addition to existing Convention facilities. Banquet capacity of the combined facility will be 6,500 guests enjoying Adelaide Convention Centre's renowned standard of five-star dining.

The new speaker system is the QLight Powered System comprises 16 x TQ440SP Powered 3-Way enclosures and 8 x TQ425SP Sub Woofers. The system provides up to 134dB peak SPL.

Mike Smith, Director of Technical Operations for the Adelaide Convention Centre explains that many factors were crucial to their decision. "Our criteria for choosing speaker systems were quite specific. The obvious starting point is a system that gives a smooth reproduction for both speech and music, so listening test were the most important part of our decision making process."

"Our business mix is quite varied, from plenary sessions of 150 - 200 people to large production for dinners of 3500 +. The system had to be scalable in that we would use the complete system for a large dinner and break the system down in to smaller stand alone systems for the smaller events.

"We needed a physically small box that could be flown discretely from box trusses without looking out of place in a sophisticated themed dinner environment.

Audio Telex were appointed distributors for the Turbosound range in January 2001. For more information on the range, call Audio Telex on 61 2 9647 1411.

NETWORK 10 GEARS UP WITH FAIRLIGHT



After an extensive search for an audio post upgrade, Network Ten has chosen a new Fairlight system.

Fairlight's 24-track Prodigy2, a fully-integrated disk recorder, digital audio editor and automated digital mixer (featuring Fairlight's QDC technology) was recently installed at the TV broadcaster's headquarters in Sydney.

The Prodigy2 is now the cornerstone of TEN's busy promotions post-production suite. The facility operates 16 hours a day and may produce 50 or 60 mixes a night following a full day of track-laying, voice-over and ADR work.

According to Jason Tuendemann, TEN's Sydney Engineering Manager: "The purchase of the Fairlight system represents a change of direction for us.

"With digital broadcasting well underway, TEN needed to gear up to cope with the complexities of mastering for 5.1. Prodigy2's technology can deal with these new demands.

We also needed speed, versatility and reliability, and real time networking to allow us to scale the system in the future.

Farnham added the Fairlight system solved a key staffing issue. "With our previous system, we found it difficult to find permanent and freelance operators who knew how to drive the gear. However, so many Fairlight facilities are installed in Sydney and around the world that freelancers who are already trained and experienced Fairlight operators are calling me. This should offer significant training time and cost savings."

For more information on Fairlight, contact them on +61 2 8977 9902

Pictured: Jason Tuendemann  
TEN's Sydney Engineering Manager

Charles Sturt Uni Gets Amtech and JVC on D-9

Charles Sturt University one of Australia's premier training institutions for Broadcast Production has committed to JVC's Broadcast 50M/bit D9 format VTR's.

Forming the core of their production facilities the University chose D9 after industry consultations and format reviews. Picture quality and price performance decided Charles Sturt University's conversion to digital 16:9 television production. D9 is one of the worlds most installed 50 M/bit Broadcast formats and features control layouts that are ideal for training regardless of the facility that graduates are placed in after completion of Charles Sturt University courses.

The university selected the BR-D860E, one of the two newcomers to the D-9 product line, as the editing recorder that they will use to train the broadcasters of the future. Both

JVC Professional and Amtech have worked hard with Charles Sturt University to ensure they had the best products for these young broadcasters.

The other newcomer to the D-9 product line is the BR-D560E player that is designed and based on the electronics pioneered in the high-end broadcast-quality BR-D92 and BR-D52 series of D-9 editing recorders. The BR-D860E and the BR-D560E have two audio channels and overall operation has been improved.

The two new additions to the D-9 line employ the new "instantaneous-lock" auto-tracking algorithm that JVC originally developed for its top-of-the-line BR-D92 series.

JVC is distributed in Australia by Hagemeyer Australasia: +61 2 9370 5588 www.jvc-australia.com

From page 9

## DVD-A: The BETA of the new millennium?

"In anticipation of this format growing in popularity, we have introduced a DVD chart, which appears on the ARIA website each week. However, reported sales in this area still continue to be minimal."

Connections contacted 90 recording studios around Australia to determine whether they are equipped or are planning to upgrade to DVD-A, and whether in fact they have had any requests for the format. Only a small number indicated they were DVD-A ready or were in the process of upgrading.

**Martin Pullan** replied that there has been much discussion about DVD-A at Edensound and said he believes it will still be a while before he will consider upgrading to the format: "I think it will be a long time till this happens as most budgets in Australia for records wouldn't run to doing a surround mix as well. And any budgets that are big enough go O/S! Aussies are best in the world at just about everything we turn our hands to but the record companies send a lot of the good ones overseas".

**Neville Clark** from Disk-Edits reported: "We are getting ourselves ready to be able to handle DVD-A preparation. We have Sadie that is ready for the option and we will be setting up Quested monitoring to compliment our existing Mastering room setup. No projects or artists are requesting this format as yet. There will be a DVD video and DTS surround project that will be undertaken in the last quarter of this year."

At Pro-Copy, **Mark Whitehouse** reported: "We have the Sonic Solutions DVD CREATOR System installed at Pro-Copy and have started the long education process of our customers in this area! Generally it's more complicated and expensive to put together than regular CDs. We have done a few projects already and most of the clients would be of a corporate nature. 'Strict' DVD-A is at a minimum, what is common is DVD Surround audio in the DVD video format. This will play in all regular DVD machines which is just as well, as commercial DVD-A machines aren't available here at the moment!"

**Greg Clarke** from Electric Mountain advised Electric Mountain Studios has upgraded to ProTools 5.1. "Currently we haven't had a client requesting surround monitoring, but should that situation arise, then this will be done. In all other areas, Electric Mountain is surround ready (recording, mixing, monitoring and metering.) up to 7.1 channels.

Studios 301 are fully equipped for the format and **Steve DeFina** told Connections they have already done "a few" 5.1 mixes.

**Neil Gray** from True Form Music Services said: "We don't have facilities or demand for DVD-A as yet, our Mackie HDR-24/96 is 96Khz capable with the right I/O cards and I'm eagerly watching and awaiting the arrival and acceptance of commercial product and players for this

new format as I have only read about and not heard it at this point (hanging out actually).

"An interesting concern for me at present is all the people who have gone out and bought DVD players not aware that they will need modifications done or possibly a new player to play DVD audio."

Several other studios indicated they are seriously considering upgrading if requested by clients, but most either can't afford it or are dubious about the format's success and the demand by artists and consumers alike. **Shane Hughes** from Domenic Sound summed it up best:

"My feeling is that while it is a very exciting new format, it's just too expensive for the average person. It will more than likely FLOP. They now have to spend even more BIG dollars to equip their home systems for playback (chuck out the 'brand new' DVD player that stupidly does NOT support the new DVD-A format) and the discs/albums I've seen on the shelves cost over \$40 retail per unit. How many new formats have been thrown at consumers in the last ten years that have failed? I've lost count and lets be frank - consumers really don't give a shit about this stuff enough to spend over 40 bucks on yet another '2 hit songs/10 dud songs' album - fancy pics or no pics. Why do you think MP3 downloads are so popular. When will we learn?"

And as for interest from clients: "Absolutely NOT! Generally they don't even know what it is, and I've been talking about DVD-A for over 18 months. DVD-A has had the worst media coverage of any new consumer format that I know of.

And **Jon Robertson** from Feral Studios spoke for the cynics in the industry:

"I really don't think we will bother. When something is called type A it scares the hell out of us as type B,C,D,E etc are just waiting to bite you on the ass — after you invest in new gear".



Have your say...  
Is DVD-A here to stay?  
Is it here at all?  
mail@conpub.com.au



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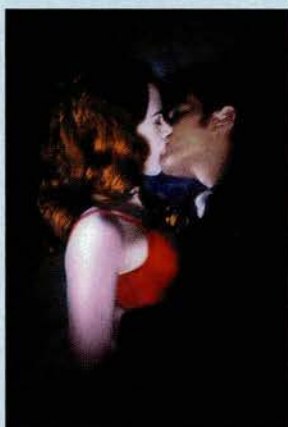
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www.soundonstage.com.au



## C H A R T S



ARTIST: Regurgitator  
SINGLE: Fat Cop  
PRODUCER: Ben & Quan  
RECORDED @ Home Studios by Ben & Quan.  
MIXING: Beachamp Building, London by Andy Gill  
MASTERING: Mike Marsh @ The Exchange, London  
ADDITIONAL INFO: Other tracks mixed on the single Mastered by Steve Smart @ Studios 301



ARTIST: Nicole Kidman & Ewan McGregor  
TITLE: Come What May  
PRODUCER: BLAM, Josh G Abrahams, Craig Armstrong & Marius DeVries  
ENGINEER: Geoff Foster  
MIXING: Andy Nelson & Brad Haehnel  
VOCAL PRODUCTION: Simon Franglen

## New South Wales

ARTIST	PRODUCER	ENGINEER	SESSION
A# Sharp Studio	Jeff Cripps	24 Track Analogue/32 Track Digital	
Gher	Jeff Cripps	Jeff Cripps	CD
Jack Oolpa Dreaming	Jeff Cripps	Jeff Cripps	CD
Tara Anglican Girls School	Jeff Cripps	Jeff Cripps	CD
Lemon Squeezin daddies	Jeff Cripps	Jeff Cripps	CD
Amanda Easton	Steve Zitkus	Steve Zitkus	CD
Bush Traks Pty Ltd	Ruth Miller +61 2 6689 1290	Professional Digital Recording Studio	
Kangaroo Club	Mereki/T Tonkin/M Turner	Dave Hight	Album
Damien Gerard	Sound Studios Marshall Cullen +61 2 9555 1710	2" 24 track Analog/Pro Tools Digital	
The Helldoradoes	The Helldoradoes	Russell Pilling	Album
Sneeze	Nic Dalton/Half A Cow	Russell Pilling	Mixing
Sideshow	Sideshow	Russell Pilling	4 Track EP
Fendahlene	Fendahlene	Russell Pilling	EP
The Fabulous Tee Jays/Chris Turner	Chris Turner	Russell Pilling	Album
Feral Studios	Jon Robertson 02 62993224	30 track recording	
Juggernaut 101	Jon Robertson	Jon Robertson	Album
Kandi Doz It	Jon	Jon	album tracks
Di Flynn	Jon	Jon	Album
Exhibit A	Jon	Jon	Demo's
Nu-Town	Greg Hopping	Analogue/Digital Recording & Production	
Southern Outpost	Patrick & Sofie	Sofie Loizou	Single
Kelly Ophel	Greg Hopping	Greg Hopping	Demos
Supa Nova	Sofie Loizou	Sofie Loizou	Demos
Andy Ciccone	Greg Hopping	Mark Worrall	Album
Q recording	Michelle Barry +61 2 9212 4851	SSL G+, Studer 2"	
Blue Pie Productions	Phil Munro	Phil Munro	EP
Lavaland	DC	Paul McKercher	Album Tracking
Vincent Serravalle	Vincent Serravalle/Michelle	Michelle Barry	Demos
Speedstar	Paul McKercher	Paul McKercher	Album Overdubs
Bich	Dave Leslie	Mick Seage	Album Tacking
Rockinghorse	Anthony Lycenko +61 2 6688 4005	Neve V series Console, Studer 24 Track, Pro Tools mix 24	
The Cruel sea	Magoo	Magoo	Album Mixes
Tamara lee	Brendan Morley	Anthony Lycenko	EP Tracking + Mixing
Fats	Scott Tinkler	Anthony Lycenko	Album Tracking
Comfortable Addiction	Comfortable Addiction	Jim Arnold	Single Mix
Hector Varela	Lycenko/Macarthy	Lycenko/Macarthy	EP tracking
Soundwarp	Meredith Brooks (02) 9905 7144	Mastering	
MYX	Sharon / Steve	Meredith Brooks	Album
Billy George	Jeff / Billy	Meredith Brooks	Album
Scotty Boy Leece	Scott	Meredith Brooks	Album
Khemist	Neil	Meredith Brooks	Album
Eddy Thunder Stealer	Tim	Meredith Brooks	EP
Studios 301	Mastering Jaqui Espie	Mastering Facility	
the Cruel sea	The Cruel Sea	Steve Smart	Album
Cold Chisel	Cold Chisel	Don Bartley	Double Album
Area 7	Kalju Tonuma	Don Bartley	Album
Paul Kelly	Paul Kelly	Don Bartley	Album
Spiderbait	Spiderbait	Steve Smart	Album
Trackdown Digital	P/L Mike Duffy +61 2 9550 6890	64 track Digital-Audio & Post	
Fairytale Police Dept.	Y Gross/EM-TV	Lista/Candusso/Ryan	Dialogue Rec.
Flipper 2	Y Gross/EM-TV	Lista/Candusso/Ryan	Post Audio
Tabaluga II	Y Gross/EM-TV	Lista/Candusso/Ryan	Post Audio
Garage days	Garage Days P/L	Torei Lista	Feature Film/Band Rec.
Samoana	Juniper Films	Tim Ryan	Documentary - Audio Post
Troy Horse	Mickey Levis +61 2 9319 1799	24 Track Recording/Pro Tools Mastering	
Cathy Mac	Bertrand	Danny Go Lightly	Album
Urban Theory	Urban Theory/Mark Worrall	Mark Worrall	EP
Westpac	Mickey Levis	Mickey Levis	Recording/Mastering
KoolSkools	Mickey Levis	Worrall/Golightly	Interactive CD project
Australian Institute Of Music	Daniel Paul	Mickey Levis	Mastering
Velvet Sound	Dave McCunn +61 2 9267 2915	24 Track 2" & 64 Track ProTools 5.1 Mix 3	
Ides Of Space	Wayne Connolly	Wayne Connolly	Album Mixing
Amiel	Josh Abrahams	Andy Baldwin	Album Tracking
Dark Ordert	N.P.F	Adrian Grigorieff	Album Mixing
Tapered Edges	Ben Kilby	Daniel Clinch	Live EP
Counterpunch	Counterpunch	Adrian Grigorieff	Universal Showcase



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• Kuala Lumpur (03) 737 0935 • Stockholm(08) 730 5100.

## CHARTS



ARTIST: SGT Slick  
 TITLE: Let It Ride  
 PRODUCER: SGT Slick for Jupiter Productions  
 ENGINEER: Darren Glen  
 MASTERING: Joe Carra @ Crystal mastering

ARTIST: You Am I  
 TITLE: Kick A Hole In The Sky  
 RECORDED by Paul McKercher @ Sing Sing Studios, Melbourne. Assisted by Dave Davis  
 MIXING: Clif Norell @ Skip Saylor Studios, LA. Assisted by Paul Smith  
 MASTERING: Steve Marcussen @ Marcussen Mastering



ARTIST: Speedstar  
 TITLE: Fallen star  
 PRODUCER: Speedstar & Paul McKervcher  
 STUDIO: Q: Recording, Sydney  
 MIXING: Jeremy Allom @ Sunshine Studios, Brisbane  
 MASTERING: William Bowden @ Festival Studios, Sydney

### Queensland

ARTIST	PRODUCER	ENGINEER	SESSION
7th Dimension	Mathew Moline +61 3847 4577	Pro Tools editing, 40 track Recording studio	
42lb Fish	Matt Moline/42lb Fish	Matt Moline	Album
Martin Pearson	M Pearson/M Moline	Matt Moline	Live Album
Johnson Stompers	Matt Moline	Matt Moline	Live Album
Coral Sea Studios	Jan Sarchfield +61 7 4059 2888	Digital recording studio	
Bunna Laurie	Bunna Laurie	Josh Blair	
Seaman Dan	Nigel Pegrum/Karl Neuenfeldt	Nigel Pegrum	Album
Ashley Dargan	Ashley Dargan/Nigel Pegrum	Nigel Pegrum	Album
Foxhole Audio Productions	Mick Rayner 07 3262 5150	Prot tools Analogue	
Grant Collins	Grant	Mick	Album mix
Babel	Toby Wren	Mick/Ben Stewart	EP tracking
Bad Media Fame	Band	Mick	Demos
The DIY project	Mark & John	Mick	Demos
OPM Studios	Daniel Seymour +61 7 3374 0066	ADATS with Audio Logic	
Vista	Daniel Seymour	Daniel Seymour	Demos
Holster	Daniel Seymour	Daniel Seymour	Demos
Games We Play	Daniel Seymour	Daniel Seymour	EP
Aphasia	Aphasia	Daniel Seymour	Demos
New Settlement Rogue	New Settlement Rogue	D Seymour	Single
Taramalin Sound	Allan Lahey +61 7 3208 9736	32 track Digital: 16 track Analogue & Pro Tools	
Sid Muchow	Allan Lahey/Sid Muchow	Allan Lahey	Album
Level 13	Level 13	Allan Lahey	EP
Ben Kerswell	Ben Kerswell	Craig Loyns/ Allan Lahey	Demo
James Borrisow	James Borrisow/Ben Kerswell	Allan Lahey	One Song
Alyson Locke	Alyson Locke	Allan Lahey	Mastering
Vandersound Studios	Eric Vandersande +61 7 5546 8100	One On One Training	
Thelmas Grapes	Eric Vandersande	Paul Jackson	Demo
Witness Relocation Program	EV	Colin Laggan	Demo
Swanky Dee	Andrew Hines	Dakota Crouch	Mix Demo
Duckloaf	Andrew Hines	Emeline Dussek	Mix & master demo
The Greater Good	Andre Hines	Andrew Ehrhardt	Mix & Master Demo

### South Australia

Disk-Edits Pty Ltd	Neville/Catherine 08 8340 1377	Audio Mastering & Post Production	
Supaphatass	Band	Peter Kolomitsev	Mastering/CD Manuf
Jeanette Wormald	M Wordley	Mick Wordley/Neville Clark	CD Manuf
juju eyeballs	G Lehmann/juju eyeballs	Neville Clark	Mastering/CD Manuf
Mixmasters Productions	Mick Wordley +61 8 8278 8506	24 Track/SSL/2 inch/Pro Tools	
Lessie Does	Phil McKellar	Phil McKellar	Album Tracking
Jim Hermal	Phil Cuneen	Mick Wordley	Album tracking
Acme jazz	Julian Ferrato	Jed palmer	EP
Kate Battersby	Ray Smith	Mick Wordley	Album mix
Planet Shakers	Henry Seeley	Paul Gomersall	Live Mix

### Victoria

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Audrey Studios	Craig Pilkington +61 3 9415 8599		
The Drowners	Michael Thomas/C Pilkington	Craig Pilkington	Album
Barb Waters w/ Lisa Miller/Kieth Salmon	C Pilkington	C Pilkington	Album
Mick Thomas & The Sure Thing	M Thomas	C Pilkington	Single Edits
Madison Avenue	Coates/Pilkington	C Pilkington	Extended Remix 12"
Backbeach/Elevation Records	Mark Rachelle 2" automated mix/Digital Pro Tools		
White Boy Overbite	Denny/Rachelle	Denny/Rachelle	Programming
Renee	Mark Rachelle	Mark Rachelle	Programming
Baker Street Studios	Allan Neuendorf 03 9888 8084		
Paul Colman Trio	Paul Colman	Phil Gaudion	
Peter Breen	Dave Waterworth	Allan Neuendorf	
The Wick Effect	The Wick Effect	Kane Hibberd	Mix
Smirk	Smirk	Kane Hibberd	EP
20 Minutes	20 Minutes	Therin	Mix

ARTIST	PRODUCER	ENGINEER	SESSION
Crystal Mastering	Joseph Carra +61 3 9326 2318	mastering suite	
Snout	Snout	John Ruberto	Mastering Album
Voice Of Dissent	Voice Of Dissent	Joseph Carra	Mastering Album
Plasticine	Plasticine	John Ruberto	Mastering
Junior	Greg Arnold	John Ruberto	Mastering Album
The Restless	The Restless	Joseph Carra	Mastering EP
Dex Mastering	Adam Dempsey (03) 9372 2266	Pro audio mastering & restoration	
ABC/Heywire	Justine McSweeney	Adam Dempsey	sampler
Stiff Meat	band	Adam Dempsey	demo
CAB	Bill Trikojus	Adam Dempsey	album
Newmarket Music	Gerry Koster	Adam Dempsey	compilation
Mt Kisco Music-Graham Collier	Katsuhiro Imai	Adam	album remaster
Gusto Music Pty Ltd	Brigid Cotter +61 3 9826 4755	Music Composition, Sound Design & Audio Post Studio	
Cameron Giles	Brigid Cotter	Colin Simkins	
Honeyface	Mark Hilton +61 3 9507 2067	digital recording - Neumann, Shure, AKG mikes	
Dom Jurcec	Mark Hilton	Mark Hilton	Filth Pop Album
Sycamore	Mark Hilton	Mark Hilton	Acoustic Pop Album
Metropolis Audio	Sally Rodrigues +61 3 9696 2111	SSL Room with Pro Tools/Sony 3343	
Delta	Chong Lim	Doug Brady	Album Track - Mix
Ezekio		Chris Dickie	EP Mixing
Sarah Jane	Craig Harnath	Craig Harnath	Recording Single
Studio 52	Paul Higgins +61 3 9417 7707	3 major music production studios/ADAT/Hard disk	
Delta	Trevor Carter	Trevor carter	Single
Absolute Zero	Absolute Zero	Mitch Kenny/Jared Scott	EP
From the inside	From The Inside	Mitch Kenny	Album mastering
John Huckin	Ilex Tier	Mitch Kenny	Album
Gary Handford	Jet Van Halen	Mitch Kenny	Album Mixing
Wombat Road Recording Studios	+61 3 5145 4204	24 Track + 16 Track Analogue	
Short notice	J cross	B Clissold	Album Tracking
Young Voices	J ward	B Clissold	Live CD
Vicky, Anna & friends	A Melville	Barrie Clissold	Album Tracking
Wellington Shire		Barrie Clissold	Net Meeting Audio

**Western Australia**

Bonsai Tom Thorpe +61 8 9246 4408	Digital Pro Tools		
Pete Stone		Tom Thorpe	Album Tracking
Kay/Redman Creative Concepts		Tom Thorpe	Jingles
Yogi		Tom Thorpe	Demo
Poonshead Rob & Sam +61 8 9339 4791	Audio recording/Production & Mastering		
The Dead Ends	Rob Grant	Rob Grant	EP
Times Up	Rob Grant	Rob Grant	EP
Fret Zero	Rob Grant	Rob Grant	EP
Superscope	Rob Grant/Kevin Borruso	Rob Grant	Album
Waste Of Space	Rob Grant/waste Of Space	Rob Grant	Album
Revolver Ben Glatzer +61 8 9272 7505			
Sugar Child	Sugar Child/Ben Glatzer	Ben Glatzer	CD Mix
Purrvert	Purrvert/Laurie Sinagra	Laurie Sinagra	CD tracking
Twang Thang	Greg Bird/Vic Manfrin	Vic Manfrin	Tracking Album
Showbag	Showbag/ Ben Glatzer	Ben Glatzer	EP Tracking
Satellite Recording Darren Halifax +61 8 9470 4003	Pro Tools Mix Plus		
Riverview Church	Andrew Bolt	J Hewgill/D Halifax	Weekly TV show
Alias	Andrew Neal	Andrew Neal	Demo
Just Jazz Scholl Of Dance	Melinda	D Halifax	Music For Stage Show
Rob Baxter	Rob Baxter	Darren Halifax	Demo
Little Black Dress	Little Black Dress	Darren Halifax	Demo
Sonic Lab Mark Whitehouse +61 2 9375 3902	Audio & DVD Mastering		
Chanel 10	Liam Collins	Big Boys Toys	DVD Mastering
Dom Mariani	Dom Mariani	Liam Collins	CD master
Fra Amici	M Whitehouse	M Whitehouse	CD Mast & Teaching
Rod Christian	Rod Christian	M Whitehouse	Cruisin Sountrack Mast
Marigolds	David Hughes-Owen	Mark Whitehouse	Audio Restoration/Edit
Witzend Alan Dawson +61 8 9336 1888	16 Track Analogue + 8 Track Digital		
Jack & the Beanstalk	Joe Algeri	Alan Dawson	3 Songs
Bayou Brothers	Alan Dawson	Alan Dawson	Mastering Live Album
Behind The 8 ball	Behind The 8 ball	Alan Dawson	Single
Retracide	Retracide	Alan Dawson	Album
Heads were Dancing	Alan Dawson	Alan Dawson	Album

**CHARTS**



ARTIST: Scandal' Us  
 TITLE: Make Me Crazy  
 PRODUCER: Paul Gray & Craig Porteils  
 PROGRAMMING: Ramesh Sathiah  
 MIXING: Ramesh Sathiah & Craig Porteils  
 STUDIO: Song Zu, Sydney

ARTIST: Invertigo  
 TITLE: Say You Do  
 PRODUCER: Charles Fisher & Ralph carr  
 RECORDING: Standard Headquarters, Melbourne.  
 Drums Produced & Recorded by James Leigh @ Metropolis & Sing Sing, Melbourne  
 MIXING: Chris Lord-Alge @ image Recording, Hollywood  
 MASTERING: Stephen Marcussen @ Marcussen Mastering, Hollywood



ARTIST: Blue  
 TITLE: All Rise  
 PRODUCER: Stargate for Delirious/Blacksmith Management Ltd  
 RECORDING & MIXING: Stargate Studios, Norway  
 PRO TOOLS Programming by Mr Clarke @ The Hide Out Studios

## New Staff...

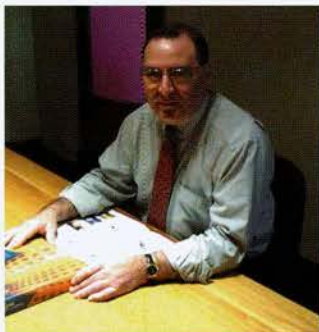
**Tim Newman** has joined the team at Concert Lighting Systems as Lighting Designer/Operator, Production Manager. Tim has been in the industry for over 15 years and has worked on many productions such as: The New Rocky Horror Show, Steel City, Annie, The Sound Of Music, Nick Cave & The Bad Seeds & Fame.

Tim can be contacted at CLS's Melbourne Head Office on +61 3 9682 6111 or email [timnewman@cls.com.au](mailto:timnewman@cls.com.au)

**Jonathan Ciddor** joins Show Technology as Architectural Products Manager.

Jonathan has been involved in the lighting business for over 30 years, with the last 15 specialising in taking entertainment lighting to architectural and theming applications to create interesting lighting solutions.

Jonathan is available at Show Technology on +61 2 9748 1122. [jciddor@showtech.com.au](mailto:jciddor@showtech.com.au)



## Philips Lighting Correspondence Course



The Philips Lighting Correspondence Course covers a broad spectrum of topics, combining theoretical knowledge with practical guidance. It intends to provide a wide and detailed understanding of modern lighting systems and their application.

The information is contained in 17 distinct

lessons, each covering a specialised subject area. The lessons build into a comprehensive volume that forms a valuable reference for any professional associated with lighting.

Local support is available to participants with Philips Lighting Engineers based in each state. The 17 lessons are divided into two main parts; lighting theory covers: light and perception, history of lighting, light and radiation, vision, quantities and units, measurements, and quality aspects of lighting. The next 11 lessons specialise in lighting hardware and cover: principles of light generation, incandescent lamps, fluorescent lamps, high pressure mercury and metal halide lamps, sodium lamps, UV radiators and applications, IR radiators and applications, special radiators and applications, luminaire optics and photometrics, luminaire housings, mounting systems and integrated ceilings.

Cost: \$374 (inc GST) for the 17 lessons. Contact: Karen Gifford - Philips Lighting for more information. Phone +61 2 9805 4113.

## Obituary - Brian Raymond Barnes

12/2/1953 - 11/6/2001

One of the leaders of Sydney's theatre community, Brian Barnes passed away after a long period of illness.

A graduate of the National Institute of Dramatic Art, Brian commenced his professional career in Stage Management with the Australian Opera and progressed to stage managing major musicals.

Brian joined Cameron Mackintosh's company in 1989 as Administrator of the Australian tours of CATS and LES MISERABLES. In 1991 he joined his col-

league, James Thane in producing JEFFREY BERNARD IS UNWELL and JEWELL OF THE ORIENT EXPRESS at Jupiters Casino and in 1992, he helped establish Andrew Lloyd Webber's newly established company, The Really Useful Company as a Director and Company Secretary. Brian left the Really Useful Company in 1998 and was appointed General Manager of Sydney's State Theatre, a position he held until last year.

Brian is survived by his parents, Joan and Ray, his brother Greg and his life partner Johnathon Murray.

-Trevor Connell

## Lighting Operators

Australia's leading Audio & Lighting Company requires part time Lighting Operators to operate Showcad Computer Control Systems, Jands Hog Boards and Martin Light Jockey Software, either Wednesday, Thursday, Friday, Saturday nights from 9.00pm till 3.00am.

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**Please forward resumes to:**

Brian Lawrence  
Total Concept Productions (Aust.) Pty Ltd  
PO BOX 6405  
SILVERWATER NSW 1811

## Stolen

The following equipment was stolen from Lighten Up Productions King street Newcastle on Sunday July 15<sup>th</sup> 2001.

- 4 Martin Mini Macs (Titanium Silver)
- 1 Citronic CDM 7.2c DJ Mixer
- 2 Pioneer CDJ100's
- 1 Citronic CD Dual CD Player
- 2 Numark DM2000X DJ Mixers
- 2 Quest Engineering QS350's 12+ Horn Speakers
- 1 Deton Max power 3000 (New Style)
- 2 Novelty Lava lamps

**Please contact**

Lighten Up Productions - Joshua Manyard +61 2 4929 4277  
Or Newcastle Police +61 2 4929 0999

**Audio Spotlights**

I was just reading the interesting article in the July Connections about highly directional loudspeakers.

Several years ago I read an article in a magazine (I think it was 'Electronics World') about a concept for ultrasonic loudspeakers, where two ultrasonic sound beam transducers are used. One oscillates at 100kHz, the other varies between 100 and 120kHz - according to an audio signal fed to it. If the beams cross, then the beats are used to create the sound that we hear - due to the difference in frequency between the two beams. The idea is that you can physically steer the ultrasonic transducers around to make the intersection point move about - and have sounds of helicopters flying around inside cinemas etc.

Is this a feasible thing to do? Due to beats being something apparent rather than real, low frequency response might be limited? I guess any ideas in highly directional audio will be picked up by the military, and be used for things like making an intense low frequency sound occur in a localised position and giving someone a heart-seizure.

Alex Wegman

Sound Production, TAFE Alanvale  
Launceston, TAS 7250

*Ed- 'Feasibility' is an issue that will be decided by manufacturers. If they think there is a market for the product then it will be built. I have also heard whispers of the system you are talking about, but I would expect any real-world application of 'Audio Spotlight' is still some years away.*

**G'day from Singapore.**

You may remember me, Leon Dark, ex Head Of Department - Lighting at the VAC. Well, I've moved north a bit!!! I'm doing the same gig (sort of) at the under construction Esplanade here in Singapore.

Well, it's going to be a great venue when it opens in October next year, but in the meantime we have to recruit and train our various staff members. There's a few Aussies up this way.....

- Robert Mitchell (ex Gellong PAC) is at the Concert Hall in Kuala Lumpur
- Grant Davis (ex Vic AC) is at the National University of Singapore

**Training on High End**

Universal Lighting & Audio Pty Ltd and High End Systems have announced technical training courses on the High End Systems range of product to be held in South East Queensland and Melbourne between August 13 and August 17.

Mehrzad Moosavi from High End Systems will be conducting two day seminars which will cover the High End product range

- Geoff Street (ex Vic AC) is Programming Manager here at The Esplanade
- Peter Bretherton (ex QPAC) is HOD MX here too.
- Rachael Farnay Jacques is Editor of our Arts Magazine (The Head of Sound is a South African by the name of Robin Shuttleworth)

I'm writing just so I can keep in the know about ENTECH next year. We may not get a chance to go, however we'll keep in touch. I believe we're subscribers to Connections already, so that'll keep us informed no doubt.

Regards from warmer climes.

Leon Dark

Head of Lighting  
Esplanade - Theatres on the Bay  
www.esplanade.com.sg

**Slam Dunc**

I've never seen any one use a BAR STOOL behind a drum kit before! The drummer must of had one mighty high drum kit...or was the bar for midgets? Truly guys...as your rag borders on being a credible professional representation of the industry.....can you really afford to carry such baggage as Deep Fry?

Totally Bemused

Daniel  
Kismetproductions@bigpond.com

*Dunc responds:*

*- Hmm, someone doubts my word? shock, horror!*

*Well, just to be sure I checked with Jim Lainz who was my trusty assistant on the gig, now living in the lap of luxury as a professional musician fronting a one man trio in Qld, and yes, he confirms it was definitely a bar stool, with a circular soft black plastic top and 4 chromed steel legs.*

*And yes, the drummer did like to sit high up behind the kit, although we suspect he may have sliced off about 4 inches from each leg of the stool.*

*Still, it looks like lots of things must bemuse Daniel, including grammar "The drummer must of (s't rely "have") had one mighty..."*

*Oddly enough, this is the only dissenting comment I've received on the article. Others who have found themselves in exactly the situation described in the article have had nothing but praise for it. Just goes to show you can't please everybody.*

*Dunk 'Baggage' man*

including the recently released X Spot. Technicians completing the course will have the opportunity to become Licensed High End Service Technicians The course is open qualified service professionals working in the lighting industry, and places are strictly limited.

For more information, please contact Justin Knox in ULA's Melbourne office by phoning +61 3 9310 4999

**Fake Beam?**

I'd just like to ask you a few questions about the magazine. The first is about the cover of the July issue's cover. I'm sure that it's hard to artificially produce an image that looks like a beam of light from a moving head but it would look much better if the "beam" angle lined up with the projector.

Secondly, would it be possible to finish a report in one sequence rather than starting a report on page 10 for example and finish on pg 30. Other than that, I enjoy reading the magazine every month and I'm happy that for once the cost of a magazine has gone down. Also, do students get any discount from the subscription costs?

Thanks  
Martin Carroll  
Year10 Student  
The Scots School, Bathurst

*Ed - Your question about the beam of light on the cover of the July issue has come from a few people out there - so, for the record: the beam of light on the cover is the actual beam of light from the unit. When we had the cover photography done, our cigarette-smoking photographer used his exhaust and a very long exposure to make the picture work. Look closely and you can see the texture in the smoke - not something you can easily do using Photoshop!*

*The 'out of sequence' story is something we do try to avoid, but sometimes it is impossible to do this, include the most up-to-date news and keep the 'turn-around' of the mag fast. We will keep on trying!*

*We will have a think about student subs.*

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by Mandy Jones

## A Day In The Life Of Mark Spicer - Lighting Technician

Mark's involvement in the industry started while he was studying to become a teacher at Rusden Teacher's College in the early 70s. To support himself through college Mark took up casual work at the Palais Theatre as a dome operator, and when he was offered ongoing casual work on the return season of Jesus Christ Superstar at the Palais he was seduced by the lure of the theatre and decided not to continue his course. Mark learned his craft working at the Palais on opera and ballet shows, before moving into television to work for Crawfords on The Sullivan's and Special Squad. His involvement with the Victorian Art Centre started soon after it opened in the early 80s. Mark has left the VAC several times to try new careers both in and out of the industry, but he always seems to return. Mark lives close-by to his twin nine year olds Ben and Jake, in Ferny Creek in the Dandenongs outside Melbourne.

**7.30am:** On a normal bump-in day we'd start at 8am although increasingly people want to start at 7am. If it's an 8am start I'd get here at 7.30am so I can have half an hour to have a think about the day in an empty space. That's really important to me.

On a normal bump-in from 8 in the morning till midday we'd rig the overheads first of all. In the afternoon we would look at rigging FOH, ladders, booms and special bars, and start working on set electrics.

I'm one of the crew on bump-in, setting everything up and hanging lights, so on a normal bump-in day I'm doing what the rest of the crew is doing. Increasingly there's OH&S issues that we have to look at so a lot of my job is checking to make sure procedures are followed. Once everything's rigged nothing can fly out until I've checked it, so once everything's checked, it flies out and we move on.

A big part of my job is delegating because its such a large theatre you've got to make sure people are out doing FOH and that there are people working on the flyfloor, patching, and going to the grid to attach the cable reelers. We have a normal crew size for a bump-in of anywhere between six and ten, depending on the size of the show. And a lot of people that come here haven't necessarily worked here before or are relatively new so I have to pair them up with someone who has been here quite a long time who knows the patching and where everything is.

**Breaks:** We have two meal breaks, lunch and dinner. We have to have a meal break after five hours and we just about always have a morning tea break. Quite often won't

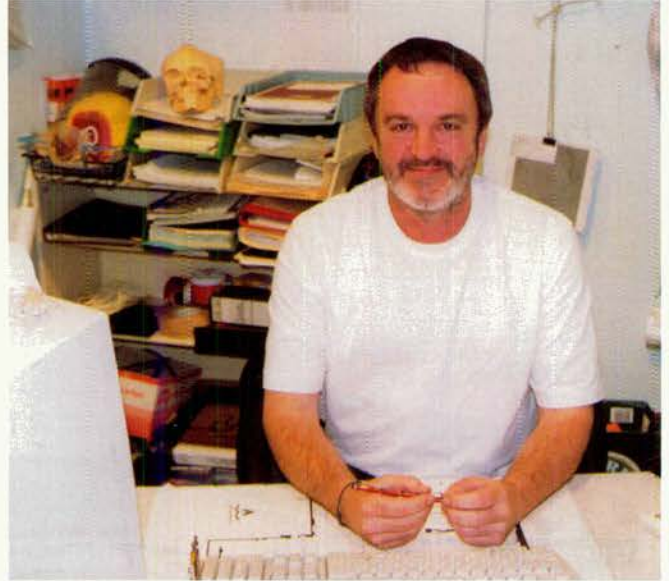
have an afternoon tea break, because that's when it's starting to get tight. If things are progressing well then we'll take 15 minutes but that's all. It's up to me to co-ordinate meal break times with the hirer, and to make sure the crews have a meal break after five hours.

**Afternoon:**

After lunch we keep going with rigging and patching and then before 6pm we like to flash everything out and trouble shoot: all the problems. So by 6pm we've usually got everything rigged, flashed out and 99% is working so we're ready to focus. That's generally the timeframe and it leaves the evening free to start focusing, continue any set electrics, and in the case of opera, start building booms for the next opera that we'll be putting on in two days time. We're generally not completely focused by the end of the day, because it's a large theatre and everything takes a lot longer which some people forget. They look at the lighting plan and think it's not too extravagant but once it's in the theatre it can take you five minutes to get from the stage to a lighting bridge. We continue to focus the next morning and then generally look at starting to light either before or after lunch that day. How much time we spend on plotting is completely up to the hirer. They can do it in 2 hours or 2 days, it's their timeframe.

**7.30pm:** I ring my sons every evening just to see how their day has been, but I can't ring them between 7 - 7.30pm because that's when Big Brother is on! They come in here a lot so they know how to operate the riggers and turn on the smoke machines but I'm not really going to encourage them to work in the industry because there's not enough money in it. I'd rather they do something else that pays extremely well so they can support me in my retirement!

**Home time:** At the end of the show I go home. It's a long drive home and when I'm finished I go, it's as simple as that, because of



**Name:**

**Mark Spicer**

**Age:**

**46**

**Occupation:**

**Head Of Lighting**

**Company:**

**State Theatre,  
Victorian Arts Centre**

**Location:**

**Melbourne**

(cont page 77)

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by Tiny Good

## Inverting Chain Motors

The mere term of "inverting" a chain motor is a relative one and you need to be careful when talking to a manufacturer or reseller of chain motors to describe what you mean by inverted.

For all manufacturers of chain hoists, the hoists are designed and specified for motor UP operation, and only some are rated for "inverted" or motor down operation. So when the entertainment industry talks about inverting motors you are actually turning the hoist the "right" or "intended" way up

Inverting chain motors is a subject that has more myth than fact. The number of rubbish facts I have heard from "people that know" that are not just wrong, but plain deadly is amazing.

The truth in plain simple terms.

1. Not all chain hoists can be used motor down or "normal" for our industry. CM, Coffin, and GIS are some that can, but check with the distributor if you are not 100% sure, and have the paper work to prove it.

2. Whichever way up, the up button must go up. There is a theory that if you invert the motor it has to run reverse phase, this is not true, and is dangerous, as the limits are not

functioning correctly in this situation

The up button should always make the chain shorter, and down longer, whichever way up the motor is.

3. The chain bucket or other device should not jam the chain port and should allow the chain to eject smoothly. You can in an emergency rig a different method for collecting the ejected chain, but it should run in and out of the motor smoothly.

Some older motors had a gravity contactor instead of a sprung loaded contactor, which means that when turned over they will chatter on their own as the contact is made by the plunger falling closed. There are few of this style of contactor left in service but you should be aware of them.

"Inverted" motors are becoming more widely used in the corporate market where low headroom and clean lines in ballrooms and function centers are needed. Some motors are simple to turn over, some require some simple modification to the chain buckets, but whichever you have, tell the people you hire them from that you will need to rig them motor up so they can tell you how to do it and give you the tools required

The rigging information contained here is the opinion of Tiny Good based on industrial training as a rigger, and job experience. No liability is accepted for use or misuse of this information.

## My Gig (cont)

the hours I do, I don't want to spend any more time here than that. On opening nights I stay back for a drink but other than that I just go home.

Being fulltime I have to do 38 hours over five days but I always do more. I would probably work between 45 - 55 hours per week on average. It's not uncommon during big set-ups to do 70 hours per week. Some days I'm really exhausted when I get home, especially when I'm doing three or four days with just a ten hour break.

There's a lot of responsibility in this position because I'm answerable to the VAC management and production department, and there's a lot of policies and procedures like OH&S and EEO that have to be followed so I've got to make sure that everything going on in my department is following the building's procedures. I'm responsible to the hirers on the stage itself, the visiting technicians and making sure they're happy, then I'm responsible to the crew, making sure that they're following procedures and that they're all getting meal breaks and generally keeping them happy. Like any large theatre you live or die by the quality of your casuals. They do 90% of the work for you and they need to be looked after. I don't think they're given enough credit for what they do so I always try to treat them more professionally, especially when it comes to rostering and giving them plenty of notice.

If I had to break it down I would say I do 50% hands on and 50% office work - I know no matter what figure I say someone will scoff at me! But I still enjoy doing the hands on work, I wouldn't be in the job if I didn't. I'm a great believer in the philosophy of use it lose it. I need to be hands on - if someone's

sick I'll do dome, I work bump-in like everyone else, and I still do cues during shows as well. There's nothing better than doing dome for a show you've never seen from the front and you don't quite know who the characters are. Ideally I like to have someone on the crew who is a board operator as well so if something happens someone else can operate. I would rather not run the board where I'm locked into a control room situation because I need to be around the stage so if there's a problem I can respond to it.

Basically I just do what everyone else does, plus a whole lot of office work. During the performance I'm in the office catching up on paperwork. That's when I can do all the admin. I come out for all the interval changes and scene changes, so I'm still part of the show but during the straight performance parts that's when I'm working on the plans of the next show coming up, working out the rostering, co-ordinating venue maintenance times, talking to other departments, all that kind of stuff.

A lot of my work is pre-production. For the amount of shows we have through here (357 days per year) doing our homework is really important. So a lot of the office work I do is sussing out the lighting plans and staff requirements before the show gets in the theatre.

It's a fantastic theatre to work in because it exposes you to such a diverse range of shows, and there's always something to learn and to keep you interested. The standards are very high here and we try to maintain and go beyond those standards. The companies that come in here really expect quality. We've got all the back-up and resources here so there's no reason why we can't give deliver.

by Graham Walne

## A Change Is As Good As A Rest

I'm naturally very organised and my training just emphasised or focussed my habits into a system. However, it's taken me many years to achieve what I hope is a balance between planning and relaxing, working hard and playing hard.

Along the way I've encountered many challenges to my equilibrium and I can't say I always met them with peace and wisdom. Most of this is to do with age, much is because of the way lighting designers have to work.

For most of us the rig is designed before we see the actual set, before we see it in the theatre, before we see the actors in costume, before we see all the elements come together. It's really a calculated risk with the calculations using data from other productions and the risk coming from this situation we've never been in before. Of course today we have moving lights, and tomorrow more of us will have them. Of course we have more and more sophisticated colour change and tomorrow more of us will have them. Meanwhile for most of us changing colours and focus is a laborious process, not for us the mega-musical night crew that takes care of the LD's daytime notes.

As a result it does pose a problem when a set designer or director asks for an alteration, a shaft of light where there isn't one, an effect you were reserving for act three to be used in act one. How do you deal with this? Years ago I resented the intrusion into my design and the extra work it meant for me and my crew. Today I hope I deal with this more maturely.

In 1983 I stood for the first time on the stage at Boston Opera looking out into the darkened and dusty 1927 Baroque auditorium. I was in a country foreign to me, with a crew who I didn't know and who had never heard of me and with equipment I hadn't used before. Much of this is par for the course for LDs. As I contemplated the challenge I faced I little dreamt I would light 25 major operas there. What threw me at first was the way in which the company worked. Sarah Caldwell, it's genius director, loved improvisation, partially because of its potential for discovery and partially because it diminished planning and gave her more control.

Schedules were made only to be broken and became mere decoration pinned in strategic places. Rehearsals sometimes never started, frequently went on later than planned or ended hours earlier. So what you might say, but in Boston the rehearsals were conducted on stage so alterations like these seriously disrupted set building and focussing. Not surprisingly production managers who stayed were in a different league.

On one production Sarah wanted to see what the set would look like 3m further downstage, not unknown you might say but this was an 18m wide pros and a 13m deep stage, so not an easy task. Some directors would have left it to the stage crew, not

Sarah, she sat centre stage all night as the crew laboured and then as dawn broke looked at the smaller stage space and remarked 'take out the improvements'!

Boston Opera changed productions at the last minute and on one memorable occasion audience arrived quite correctly for the premiere of 'Taverner', we however were dress rehearsing 'Don Giovanni'.

It was in this atmosphere that I first met the Bolshoi and supervised the lighting (backed up by a superb crew please note) across all Boston's venues for the first Soviet-American arts festival. The Russians respected the traditions in their work but pre Gorbachev their vast labour force meant any whim could be indulged. After many a careful day lighting to the watchful eye of their legendary designer Valeri Leventhal ("just 'touch' it") the last words as we rose from the production desk were always "of course tomorrow we change everything". And they meant it.

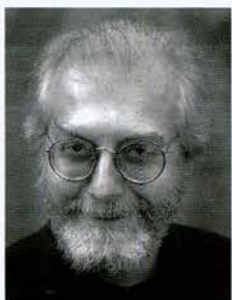
Lighting 13 ballets for the Bolshoi in London I was embroiled in a dispute between their artistic director and the producer. The Bolshoi wanted to alter the performance schedule and were unconcerned that tickets had already been sold... "OK we go home", So the schedule was changed. Eventually despite the impressive military operation the producer had put into place to mount such an event, the following day's schedule could only be posted at 11pm, and even then...

Philosopher Bertrand Russell advised that when faced with a daunting task a degree of perspective could be obtained by contrasting it with the most horrific experience one could imagine. There were times in Boston when the lack of any structure as the opening night loomed were almost too much to bear, but by comparison to death or the loss of your soul mate it really was nothing.

To some extent we can plan for change. Of course we are limited by the equipment to which we have access, we can't deliver more lights, more angles, more colours, and less shadows than the physics and the dollars can provide, whatever our imagination asks for. Nevertheless it's a good plan to put some spare lamps in the rig and in good vantage points. It makes sense to calculate angles in advance so that no light is wasted. It's wise to place as much of the rig in as accessible positions as possible - so that changes are easy. It's essential to have the crew on side by involving them in the decisions so that they will go that extra mile with you. And the more you know about the production, its director and set designer then changes will come from you not from them.

In lighting terms coping which change means having the right attitude to the process. It means seeing the design as organic and barely ending with the first night, rather than just one task on a long list. Change is probably not restful in theatre terms, but it isn't fatal and it might just be refreshing.

"There were times in Boston when the lack of any structure as the opening night loomed were almost too much to bear..."

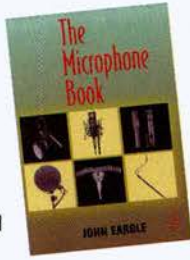




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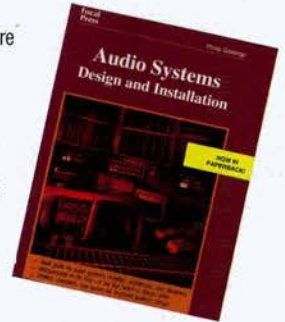
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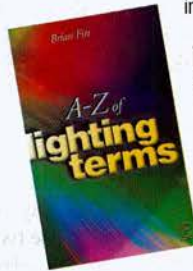
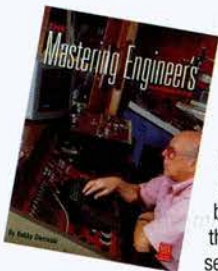
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## The Mastering Engineers Handbook by Bobby Owsinski \$54

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## THE A-Z OF LIGHTING TERMS By Brian Fitt \$52

The A-Z of Lighting Terms will be of use to all those in the industry, particularly students, who have heard expressions or terms and wondered what they meant. Although most technical books have glossaries, this book has expanded on many of these terms using illustrations to clarify some of the more complicated principles, formulae and laws.

There is much common ground between American and European terms and practices and this book aims to give a transatlantic flavour. Training in the lighting industry is very much by experience and hopefully, this publication will be a good basis for the theoretical and practical side of lighting.

and also looks into the future with an expansive section on surround mastering and multi-channel delivery. Plus, the book features interviews with such mastering giants as Bernie Grundman, Bob Ludwig, Glenn Meadows, Doug Sax, and more.

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## The Flick...

...And How To Get It

Have you ever been fired, sacked, let go, given the boot, the flick, the bullet, the Tijuana Brass? There are not many people who haven't, at some stage of their working lives. I certainly have - I've been on the receiving end and I've also had dish it out as well, but only to people who truly deserved it. And apart from any legal requirements, there's definitely a right and a wrong way to do it.

Keen readers of this column (Who are they? Ed) may remember that, a long time ago in a galaxy far far away, I once worked for a large multi-national record company.

Headquartered in Sydney, there was a regular turnover of sales staff and managers whenever low record sales threatened to interrupt the continuous flow of profits being shovelled into the gaping maw of the beast. It didn't matter what reasons there may have been for low sales - bad choice of artist and product being the main ones - the sales managers were always to blame, and they would be culled on a regular basis and replaced with fresh meat.

In the Victorian office, if there was to be a bloodletting in the sales manager department, the national sales manager would ring up to say he was coming down for a visit, & get the sales manager to pick him up from the airport. He would then deliver the bad news to him en route to the office, so that the two of them could have his resignation story ready to tell the troops later on that day. As a method of delivering the bad news, it left a lot to be desired.

Just before I started work there, the unsuspecting sales manager had picked up the national sales manager from the airport and been given the heave ho on the drive down the freeway. Hmmm - bad move.

"You're sacking me? Oh my God - oh - oh - oh!" he gasped, and promptly had a heart attack and passed out. Totally out of control at about 120 kph, the car hit the barrier, flipped over, got rear-ended by a semi, and the two of them ended up in hospital for several weeks, at huge expense to the company since they both left with massive payouts!

From then on the system was modified; the (new) national sales manager would simply arrive unannounced at the office, having driven himself from the airport!

Up at head office, though, they had other problems. At the pressing plant there had been a spate of graffiti attacks, scrawling gratuitous remarks like "Jones is a shithead" "Jones roots chooks" "Jones has a smelly bum" etc. on the walls. Jones (not his real name but it will do) was the plant manager, a septic who took himself very seriously, and instigated a search for the culprit.

Most companies faced with this type of problem would put it down to normal Aussie larrikinism, order in some beers for the workers, and sit down to discuss any grievances they might have.

Not this company though. They jumped right in at the deep end and at great expense engaged a top handwriting expert from the USA to analyse the graffiti. He flew in, photographed it all, and then spent two weeks carefully comparing it to the writing on the whole staff's job application forms! At the end of this time he returned with a name.

"This is your guy," he announced. "Unmistakable points of similarity."

The general manager was stunned. The name he had given them was the leading hand, someone who had been there twenty years, always been in on time, never taken a day off sick; in short, the best worker they had. Still, he was the one the 'expert' had picked.

So they called him into the office, told him he was being re-trenched as they no longer needed him. The legal department had said not to give the real reason as that could leave the door open to

a court challenge, so they gave him his severance pay and waved him goodbye.

He promptly walked next door to XYZ records, got a job straight away at better pay, and poached another ten of the best people from our plant!

Not only that, but a week later the graffiti started to appear on the walls again, in the same handwriting! By then the 'expert' had flown back to the States and was somehow unavailable.

On the other hand, we had two reps who were working a scam. They would order a bunch of hot selling albums on a shop's account, intercept the order when it arrived at the warehouse, put it in the back of their cars, and sell the records off cheap for cash. Then they would do it all again.

It was perhaps a tad more proactive an enterprise than was legal, and as a business plan it had one fatal flaw - it could only last for 30 days, max! As soon as the shop got their statement for the month they would instantly see this giant amount of records they had never ordered had been invoiced to them, would phone up to complain, and the effluent would hit the air-conditioner in a big way. Which it did.

These two guys, both of whom had been with the company for a couple of years, stupidly risked their whole working futures on a scam that was guaranteed to be found out within a month! Talk about short-sighted. The decision was made to just get rid of them quickly and quietly; no-one at head office wanted anyone outside the company to know that their procedures were slack enough to let this sort of thing happen.

The sales manager was away on leave for a couple of weeks, and so as acting sales manager the firing was dropped into my lap.

Friday morning I called them into the office, went through the paper trail that led directly to them, and said "You bloody idiots! How long did you think you could get away with this?"

They shrugged their shoulders, mumbled and looked at the floor. What a pair of dickheads. I reminded them they were lucky not to be headed for a holiday at Club Pentridge, gave them their final payout cheques, took their car keys, and pushed them out the door. On the way out, one of them turned to me.

"Do you think you could write me a reference?"

Well, I was going to finish right there but 'her incords' said it wasn't fair to leave out the time that I was sacked. I was hoping to spare myself the embarrassment, but she insists.

I once worked for an exhibition company, selling space in an exhibition of professional cleaning products. Not the most exciting of shows, and one that was extremely hard to get anyone interested in having a stand at it.

Eventually the two bosses called me into the office.

"Dunk," the first one said, "We've come to a decision. We're going to let you go."

"Great," I replied, poor naive fool that I was. "Where to?"

They looked at each other.

"No," he continued, "We're letting you go!"

I still didn't get it.

"Yes," I smiled, "Whereabouts?"

Sensing they were getting nowhere fast with the subtle approach, the other one took over.

"Look," he said, "You're fired. Get it?"

Oh. Now I understood!



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### INFOCOMM Japan

29 - 31 August - The Big Sight, Tokyo  
[www.icia.org](http://www.icia.org)

### PLASA

9 - 12 September - London  
[www.plasa.org.uk](http://www.plasa.org.uk)

### INFOCOMM EUROPE

12 - 14 September - Cologne, Germany [www.icia.org](http://www.icia.org)

### AES 111th (Audio)

21 - 24 September - New York  
[www.aes.org](http://www.aes.org)

### LDI

2 - 4 November - Orlando, USA  
[www.aes.org](http://www.aes.org)

### NAMM (Music/Audio)

17 - 20 January, 2002 - Anaheim, LA [www.namm.org](http://www.namm.org)

### ENTECH 2002

4 - 6 February, 2002 - Darling Harbour, Sydney  
[www.conpub.com.au](http://www.conpub.com.au)

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