

BROADCAST[®] engineering

An INTERTEC®/K-III Publication

March 1997/\$10.00

COUNTDOWN TO NAB

ON YOUR MARK . . .
GET SET . . .
GO!

Some Countries Have It ALL!



WSIX - Nashville, Tennessee "Country Music Station of the Year"

A-500 Studio Furniture delivered March 1993
A-500 Console S/N 20789 delivered April 1993
A-500 Console S/N 20792 delivered April 1993
A-6000 Studio Furniture delivered March 1995
A-6000 Console S/N 22536 delivered March 1995
R-16 Console S/N 22557 delivered March 1995
SP-5 Console S/N 22593 delivered April 1995

1995 Academy of Country Music Award
1995 Marconi Country Music Award
1995 Billboard Country Music Award
1995 Country Music Association Award
1995 Country Music Association SRO Award
1995 Gavin Country Music Award
1996 Gavin Country Music Award
1996 Academy of Country Music Award

Wheatstone Model A-6000 Audio Console shown

 **Wheatstone Corporation**
tel 315-452-5000 / Syracuse, NY

Circle (1) on Free Info Card



1996: DTV Transmitter
for WRAL-HD, Raleigh
First U.S. HDTV Station

1995: First ATSC-Tested Exciter

1993: First
NTSC-HDTV Antenna

1990: RF Test Bed

We took a few remarkable steps to give you the smoothest path to DTV.

As you begin planning your move to digital television (DTV), you'll want a partner who can give you the quickest, easiest and safest path possible. Harris would like to be your partner.

From the start of the revolution leading to DTV, we have had only one goal—to give you the smoothest path. So we've been willing to take the hardest steps ourselves, from developing the RF test bed used by the ATTC to evaluate every HDTV system proposed for the U.S., to delivering

the proven DTV transmitters operating on the air today.

The list of Harris' "firsts" is long. But they all add up to one simple benefit for you. No matter where DTV technology takes us, you can count on Harris for proven solutions. To learn what numerous major groups who have DTV Transmitter Equipment Agreements with Harris have discovered, please call. Find out how you can count on Harris to help you make the leap to tomorrow. Today.

Harris Corporation Broadcast Division

US and Canada
Phone: 1 217 222-8200
FAX: 1 217 224-1439
Elsewhere
Phone: 1 217 222-8290
FAX: 1 217 224-2764



HARRIS

A new world of broadcast solutions

©1997 Harris Corp.

features

NAB Preview

NAB Preview	46
Conference Tables	48
NAB Extra: Sneak Peeks (includes convention tips)	64
Word Wiz	172
Exclusive <i>BE</i> FASTTRACK	175
Exhibitor Floor Map	201
Exhibitor's Showcase	218



columns

FCC Update	12	ATV Update	42
The spectrum auction debate: Hundt's hard road agenda		Accelerate or not? That is the question	
Transition to Digital ...	14	Transmission	273
MPEG: What's it all about?		Antenna pattern design	
Management	22	Field Report	280
Sparking the creative drive		CNNfn implements the latest in graphics technology	
Computers & Networks .	24	Field Report	281
Metadata: What is it, and why do you care?		Avid Technologies' Media Composer	
Production Clips	28	Perspective	282
Communicating with the field		The video disk game: A technology perspective	
Cabletec	32	Digital Basics	302
New trends in local cable production		Cable modem deployment	
Interactive	36		
Bigger data pipes: What's possible?			

departments

Editorial	06	Classifieds	293
Letters to the Editor ...	08	Advertisers' Index ...	300
News	10		

BROADCAST ENGINEERING (ISSN 0007-1994) is published monthly (except semi-monthly in June and December) and mailed free to qualified persons by Intertec Publishing, 9800 Metcalf, Overland Park, KS 66212-2215. Periodicals postage paid at Shawnee Mission, KS, and additional mailing offices. Canada Post International Publications Mail (Canadian Distribution) Sales Agreement No. 0956295. POSTMASTER: Send address changes to *Broadcast Engineering*, P.O. Box 12902, Overland Park, KS 66282-2902. CORRESPONDENCE: Editorial and Advertising: 9800 Metcalf, Overland Park, KS 66212-2215. Phone: 913-341-1300; Edit. fax: 913-967-1905. Advert. fax: 913-967-1904. © 1997 by Intertec Publishing. All rights reserved.



ON THE COVER: The countdown to NAB has begun and this year the convention is bigger than ever. This issue of *BE* gives you a running start with a winning combination of product coverage and hot tips, so you can successfully navigate this year's show.



Beat it.

You deliver the story at the top of the hour. Period. The story is everything—and the tools you use to deliver it must be proven. Flexible. And fast.

Avid can help you beat the clock. Letting you air consistently high-quality broadcasts while the competition's still running around with tapes.

Our disk-based editing system, NewsCutter®, is, quite simply, a better way to edit news. Just like word processing for video. Cut and paste. Pinpoint shots frame by frame. Make copies without degradation. And no predigitizing. No other technology allows the control and flexibility that digital-on-disk does.

Avid's newsroom computer systems, Avid NetStation™ and NewsView™, let your entire team share wires, scripts, rundowns and assignments. The latest graphical interface makes it fast and easy. Imagine the impact on productivity and efficiency.

And our unique Digital News Gathering (DNG) system integrates our news editing and playback products into a complete server-based production

system. No more waiting. No more missing the deadline.

Avid's field-tested systems are scalable, modular and open. They can be integrated into your existing analog or digital facility and will grow with you.

Sci-fi? Look again. Avid's systems are in use in more than 900 broadcast facilities worldwide. Today. That's a lot of broadcasters who can react to late-breaking news faster—and better—than you can, if you're relying just on tape.

For more information on Avid disk-based news editing, newsroom computer systems or Digital News Gathering, call 800 949 AVID. You can't control time. But you can make better use of it.



NEWS SOLUTIONS

Circle (5) on Free Info Card

DTV: A new saddle on an old horse

The spin doctors are hard at work for digital television. No longer able to sell the idea of HDTV, they're putting a new saddle on an old horse and calling it DTV. This is the latest (and at least third) term for this anchor around the broadcaster's neck. The frenzy being created by the consumer electronic industry is beyond misleading, it's damn dishonest!

One of the latest groups calling for the FCC to quickly approve DTV, this time under the guise of saving American jobs, is the IBEW. It's easy to see why the IBEW supports the adoption of DTV. After all, they want its members to be the ones who will build these supposed millions and millions of sets. While I'm all for American jobs, it's just too bad the unions aren't being honest with their members about *where* these new sets will really be manufactured.

As evidence, consider that just last month, Thomson Consumer Electronics, the nation's largest maker of televisions announced it was cutting more than 1,500 jobs from its two U.S. TV factories and moving the work to Mexico where labor is cheaper. Thomson, which makes sets under the RCA, GE and ProScan labels, will close its Bloomington TV-making plant, laying off 1,100 people. It will also cease production at its TV cabinet plant in Indianapolis, cutting 420 jobs. The IBEW claims the plant closings will affect almost 2,000 jobs.

Just a couple of years ago at an NAB press conference, I recall where the mighty Joe Clayton with Thomson Consumer Electronics chastised me and the rest of the press for "fostering the notion" that Thomson and other set makers were manufacturing most of their televisions outside the United States, rather than in America. He touted that his sets were U.S. made and that HDTV was an important development because it would increase the number of jobs in his U.S. factories. Clayton then trumpeted how "American" his company's TV sets really were; his sets used CRTs made in Missouri (the factory was really owned by Zenith, not Thomson and now it has been moved to Mexico), the

cabinets were made with wood from U.S. forests and assembled in Indianapolis. My God, by the time he was done, I felt so patriotic I wanted to stand up and salute or maybe sing "God Bless America!"

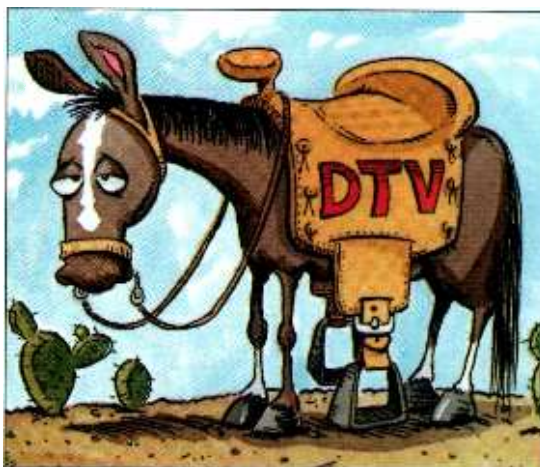
However, as Clayton continued dancing like Fred Astair around the real question, the truth became obvious to anyone paying attention. Here was a good politician touting the corporate line. While it sounded good, what was said hid the real truth. Most TV sets are not made in America and the adoption of DTV won't change that.

The consumer electronics industry realized early on that it would be much easier (and more politically acceptable) to force 1,200 TV stations to spend billions implementing DTV than it would be to tell the American public the truth, which is their TV sets are going to become obsolete — not because today's NTSC technology is obsolete, but because TV set makers need

DTV to sell new sets. The real issue shouldn't be how old NTSC is, but rather does the American public want DTV. I believe the answer is no.

To paraphrase an old adage, you can show the viewer a new digital TV set, but you can't make him buy it — that is, unless you can force the entire broadcast TV industry to turn off their NTSC transmitters. Then, the poor viewer will have no choice.

Tell me, what do you think?

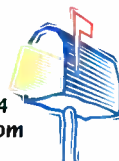


Brad Dick

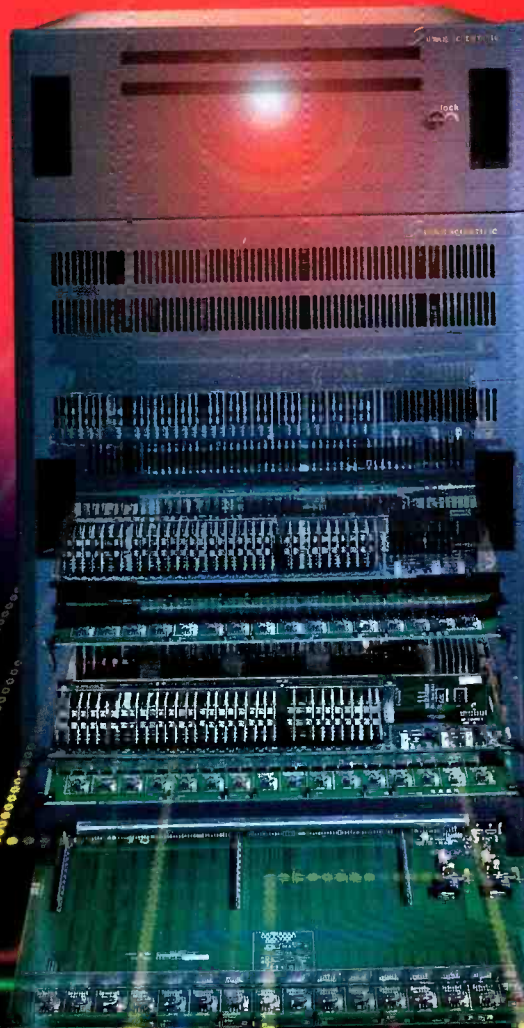
Brad Dick, editor

**READER
FEEDBACK**

CompuServe: 74672,3124
Internet: be@intertec.com
FAXback: 913/967-1905



Finally The Routing System That Takes You To Tomorrow



The **UTAH-300 Routing Switcher** with the new **SC-3 Routing Control System** will make your facility soar, now and well into the 21st century. The UTAH-300/SC-3 system easily meets the challenges of post production, broadcasting and even telecom applications, with the most powerful feature set on record.

The **SC-3 Advanced Control System** maintains compatibility with all previous Utah routers, and can even control new and older routers from other manufacturers. It features Ethernet and open control protocols, and works with PAL and NTSC. Choose from a variety of panels as well as easy-to-use Windows programming screens. You also get remote control capability through RS-232 and RS-422 ports.

The **UTAH-300 Routing Switcher** is small enough for mobile truck applications, yet powerful enough for even the largest satellite uplink facilities. A 128x128 video system (analog and/or digital) uses just 12 rackunits of space. It's also designed to expand: start as small as 32x32 and build to 512x512. Don't forget, you can change from analog to digital by simply swapping boards. The UTAH-300 is the one system that easily handles all your format needs in the analog and digital worlds, video and audio. There are even power supply options for all applications, including a -48 V DC supply option.

All Utah Scientific routers come with reliability you can depend on. They're backed with an extended warranty and round-the-clock support.

Call Utah Scientific now for your free Technical Planning Guide.
1-800-453-8782

Americas 1-800-575-8801 • Europe / Africa / Middle East 44-1635-521939
Asia / Pacific 852-2568-1993 • info@utsci.com • <http://www.utsci.com>

© 1997 Utah Scientific, Inc.



Circle (10) on Free Info Card

letters to the editor



Bye bye Vegas?

Isn't it time that NAB got on its wagon and rolled to a new city? It's not that I don't like Las Vegas — it's a great city. It's compact and clean and safe. But the citizens of Las Vegas are getting greedy. Not content with the income from 90,000 visitors for the week, plus all the setup staff, they are now surcharging room rates for the week of the show. Typically, there is a U.S. \$200 surcharge — and that's only on a three-star hotel.

From England, we are prohibited from using a package deal — and even if you choose these, you are being surcharged. The hotels will not let you arrive on Saturday. You either have to come on Friday and pay for an extra night in a hotel or arrive Sunday and waste two hours queuing for the show on Monday morning. When the rates were good, that was OK, but not now. Not with these new surcharges. Of course, the venue is no longer ideal, being split over two sites. As we have found in Europe with the Montreux exhibition, merely complaining does no good. If NAB votes with its feet and moves elsewhere for a few years, Las Vegas will quickly decide that it would love to have us back — at our price.

ARTHUR MOOR
NOTTINGHAM, ENGLAND

Dear Arthur:

It's common for organizations to get a kickback on every room booked for a convention. That's why you can usually get a cheaper rate by not going through the booking agency. At, let's just say, \$20 to \$50 a room per night, an organization can rake in hundreds of thousands of dollars just on the hotel rooms used by its attendees. Although this sounds like a big rip off, it's all part of the convention business.

Brad Dick

Let TVs be TVs

Your editorial on the Frankenstein TV was right on the mark. The simple TV still does what it needs to do very well. It provides entertainment for any sized group from one to many. The whole family can sit

down to watch Wheel of Fortune or a movie. Most people do not want to interact with the TV, other than occasionally talking back to it. Any work, other than flipping channels, while I watch TV would be an unwanted hindrance.

The PC, on the other hand, is best-suited for work or play for one person at a time. My family seldom sits at the computer together to do word processing, except maybe a Christmas letter. Using Quicken to do the family finances or surfing the web are normally done solo. Even computer games are usually played by only one person at a time. I often watch TV while I work on the computer, but I don't want to tie up part of my computer screen for that luxury.

Let TVs be TVs and let PCs be PCs. Just because they both have screens does not mean they need to be merged into one unit.

PAUL CARYL
BROADCAST ENGINEER

Dear Paul:

I couldn't agree more, having said that, we may be in the minority. Comstream this month is releasing a plug-in PC card that continues to proliferate the exact scenario you describe. It will be offering the TVPC card, which takes the downconverted output from a satellite dish and feeds it to the computer and generates separate VGA and composite feeds

for an external TV. The system makes the TV a slave to the PC.

When I asked about the obvious need to move the PC into the living room, I was told that was happening anyway, with more stylistic and ergonomically friendly PC designs. Hey, maybe for you, but I'll be keeping my PC in the den. I want to be able to separate my tasks, not combine them.

Brad Dick



Send your thoughts to the editor at

CompuServe 74672,3124
or fax to 913-967-1905.

CHOSEN BY A WIDE MARGIN.



When it comes to "widest angle" lenses, Canon's J9aX5.2 IRS/IAS is the lens of choice. From camera people to rental houses, more people trust Canon's J9aX, the proven standard in widest angle ENG lenses.

Dave Lent, a twenty-four year veteran freelance shooter purchased the J9aX as his primary lens for news and documentary work. "It's an exceptional, high-quality, wide angle lens with basically no distortion. There's nothing like it available. I use it as my everyday lens, and it's constantly redefining how I think about shooting." The J9aX features IF+ technology and an 80.5° horizontal angular field of view (93.2° diagonal) with minimal distortion. Other advantages include a 2X extender, which achieves a telephoto of 94mm, and an exclusive add-on converter enabling the lens to reach an extremely wide angle of 90°. To see the wide angle lens everyone is using, call Canon today.



For More Info:

J9aX

Call 1-800-321-4388
(In Canada: 905-795-2012).

<http://www.usa.canon.com>

Circle (11) on Free Info Card

Emmy winner for "Implementation in Lens Technology
to Achieve Compatibility with CCD Sensors."

Canon

The Number One Lens



Consumer/labor coalition calls for HDTV action

A coalition of labor, consumers and senior citizen groups are urging the Federal Communications Commission to complete the channel allocation process for digital television.

According to the coalition, the FCC and Congress need to recognize these developments and allow for commercialization of this technology as soon as possible, lest they delay the creation of thousands of U.S. jobs and threaten existing ones.

The coalition's statement was prompted by budget proposals by the administration that will single out local TV stations for premature surrender of their analog channels and spectrum taxes on their digital channels; and that the FCC or Congress may hold up the process of allocating digital channels to free, over-the-air-broadcasters.

Itelco and BBC develop a DTT modulator

The British Broadcasting Corporation (BBC) and Itelco have announced a collaboration agreement for the development of a digital terrestrial TV (DTT) modulator conforming with ETSI specifications pr I-IS 300 744.

The BBC is one of the first broadcasters in the world that is implementing digital video broadcasting technology. It has been broadcasting pilot transmissions to the DVB-T specifications since April 1996.

SMPTE Conference slated for July

The Society of Motion Picture and Television Engineers (SMPTE) will be staged in Halls 1 and 2 of Sydney's Darling Harbour Convention and Exhibition Center from July 1-4, in Sydney, Australia.

The theme is "New Technology, New Opportunities," and more than 60 major companies will be exhibiting.

For more information on the conference, contact John Allonspach; phone 612-9977-0888; fax 612-9977-0336; E-mail exhibitions@exevents.com.

WavePhore supports Microsoft's PC/TV convergence technologies

WavePhore is participating with Microsoft Corporation in introducing new technologies for the emerging PC/TV market.

WavePhore's consumer distribution network will automatically broadcast filtered multimedia content without the need for an Internet connection or modem. By embedding datastreams into existing broadcast TV

signals using the vertical blanking interval, WavePhore's consumer division will leverage its partnership with PBS National Datacast. WavePhore will transmit data over the broadcast signals of the 250 PBS member stations, reaching more than 99% of TV households in the United States and in Canada through its partnership with the Canadian Broadcasting Corporation (CBC).

NAB Law & Regulation Conference to offer invaluable info

The sixth annual NAB Broadcasters' Law and Regulation Conference is the broadcasters' road map for regulatory compliance. It will provide information on the latest news, regulations and obligations affecting the industry.

The sessions are designed to alert broadcasters to their legal obligations and save them time and money. The conference runs from April 6-9.

FCC chairman Reed Hundt will be the featured speaker at the FCC's Chairman's Breakfast. Hundt and FCC commissioners James H. Quello, Susan Ness and Rachelle Chong will make special presentations at the start of several of the conference sessions.

NAB 97 and Multimedia World exhibits exceed '96 record

This year's NAB and MultiMedia World have already exceeded last year's record of 648,965 square feet. This year's reserved space exceeds more than 720,000 square feet. With the addition of Hall A, the Sands exhibits will now occupy Halls A, B and C.

New exhibit areas this year include the Satellite & Telecommunications Pavilion located at the Sands. Also at the Sands will be a new radio/audio exhibit area and the Intranet Business Theater. The Intranet Business theater will be located in the Internet@NAB.97 area.

Joel Brinkley to address NAB luncheon

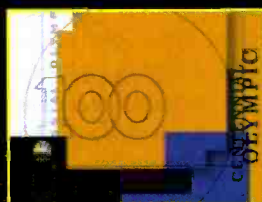
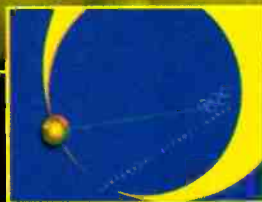
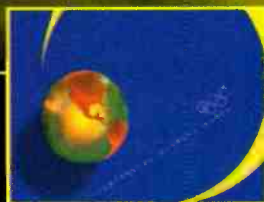
Joel Brinkley, Pulitzer Prize winner, political editor for *The New York Times* and author of "Defining Vision: The Battle for the Future of Television," will speak at the NAB Technology Luncheon, April 9.

Brinkley's talk is entitled "Defining the Future of Television," and he will chronicle the technological odyssey over the last decade devising the standard for the next generation of television. ■

Hal is creative

As a member of NBC's Atlanta '96 Olympic design team, Freelance Designer Scott Pressler relied on *Hal*®. "As a designer, *Hal* offered me complete control of the end product. I'm really conscious of how design and animation work together - animation is just moving design and I really wanted to control how every single frame looked in the animation."
Scott Pressler
Freelance Designer
New York

Hal is the complete graphics suite. It gives total control of moving images and graphics in post production.



Images courtesy of the Olympic design team at NBC.



QUANTEL

Call our 24 hour HAL Hotline now: 1 800 218 0051 Ext. 486

Quantel Inc., 28 Thorndal Circle, Darien, CT 06820 Tel: (203) 656 3100 Fax: (203) 656 3459 <http://www.quantel.com>

HAL

EXPRESS®

The complete graphics suite

The spectrum auction debate: Hundt's hard road agenda

On Dec. 26, 1996, FCC chairman Reed Hundt released a document entitled, "The Hard Road Ahead — An Agenda for the FCC in 1997." In it, he set goals for addressing and resolving a series of issues, including methods for awarding new analog broadcast licenses. Hundt concluded that the commission must reform the comparative hearing process and/or develop an alternative to it.



Harry Martin

Since the 1993 Bechtel decision by the DC Circuit, the comparative criteria previously used by the commission has been suspended, causing a massive backlog as the commission struggles to determine a reasonable way to fairly allocate new broadcast licenses. Currently, there are 710 applications for new TV stations alone, covering 91 markets.

In the interim, in an effort to alleviate the backlog, Hundt stated he could see only three ways to solve the crisis. First, Hundt suggested that Congress grant the commission authority to put the available channels on the auction block. Hundt endorsed this method over his other two suggestions by describing the auction process as the fastest and fairest way of getting licenses into the hands of those who will put them to the best use. Should Congress not approve auctions, Hundt would consider either employing the non-integration comparative criteria, which was not invalidated in Bechtel, or giving new analog broadcast licenses to applicants whose programming will contribute most positively to their communities. Hundt described successful applicants under this proposal as those who can present specific, quantifiable evidence that they are willing to provide free air time for political candidates, children's programming, material geared toward minorities and other underserved segments of the community. Finally, the commission could concede defeat and simply give analog licenses away randomly by lottery.

Senator McCain's retort

Chairman Hundt's suggestions raised the hackles of Senator John McCain (R-AZ), chairman of the Senate Commerce Committee, the Senate Committee with responsibility for telecommunications policy. In a Jan. 9 letter to Hundt, McCain intimated that he too favors putting new analog broadcast licenses on the auction block. In the letter, the senator called on the commission

not to set any new comparative standards for assigning the TV licenses inasmuch as he plans to introduce legislation that will free the FCC to auction the analog broadcast spectrum. McCain derided Hundt's suggestion that the commission give away the licenses based on programming commitments as unconscionable and called Hundt's lottery proposal indefensible.

Representative Tauzin weighs in

At odds with the idea of auctioning the broadcast spectrum is Representative Billy Tauzin (R-LA), chairman of the House Telecommunications Subcommittee. In a January speech to the Association of Local Television Stations (ALTS), the congressman made clear his unequivocal opposition to spectrum auctions. He argued that such auctions threaten the status of free over-the-air television as no other public policy proposal does.

Moreover, Tauzin stated that Hundt's agenda was quite disturbing to him. Tauzin worries that the commission is creating policies rather than implementing the will of Congress. He found Hundt's agenda to read like a public policy document even though the FCC is subject directly to Congress. The congressman made it clear that the commission does not have the right to write its own laws or otherwise set the national telecommunications agenda. What emerges from arguably three of the most influential voices in telecommunications policy is a muddled prescription. The only certain thing is that there finally are efforts under way to alleviate the backlog of TV license applications. It's impossible to predict whether legislation will emerge to resolve the current dilemma or whether the FCC will again be left to its own devices. ■

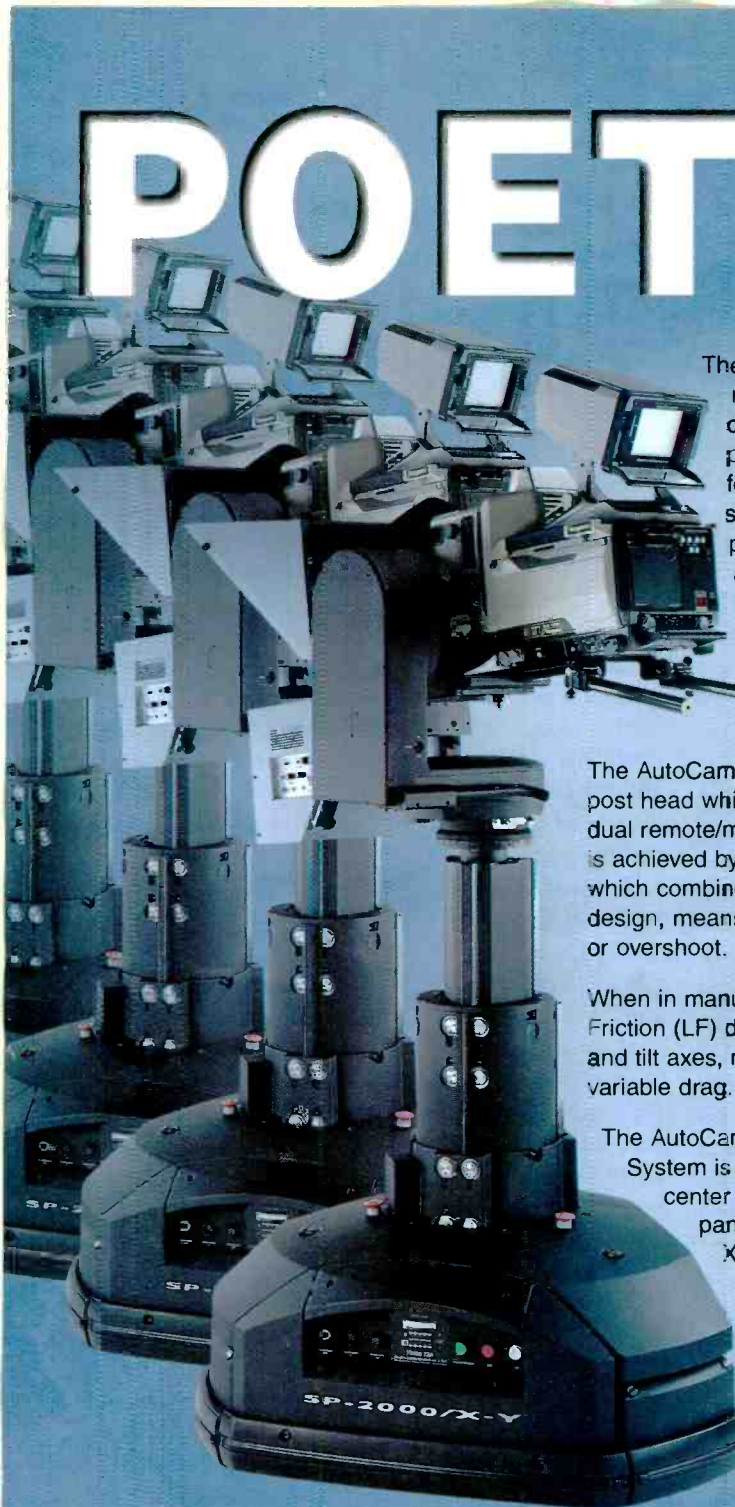
Harry Martin and J. Todd Metcalf are attorneys with Fletcher, Heald & Hildreth, P.L.C., Rosslyn, VA.

dateline

On May 31, all stations must file their 1997 Annual Employment Reports (FCC Form 395-B). On June 2, TV stations in Michigan and Ohio must file their renewal applications. Also on June 2, TV stations in the following states must file their annual ownership reports: Arizona, Washington DC, Idaho, Maryland, Michigan, Nevada, New Mexico, Ohio, Utah, Virginia, West Virginia and Wyoming.

POETRY IN

MOTION



The AutoCam SP-2000/X-Y is a freely navigating servo pedestal designed to operate with the AutoCam HS-2010MH pan/tilt head. Utilizing many of the features found in our proven AutoCam SP-300/X-Y servo pedestal and AutoCam HS-310P pan/tilt head, the AutoCam SP-2000/X-Y also features a lower profile, sleeker design and new brushless servo motor technology. It is designed to support studio or portable cameras with any combination of lens or teleprompter.

The AutoCam HS-2010MH Pan and Tilt Head is a post head which provides perfect balance and features dual remote/manual operation. Excellent acceleration is achieved by high gain digital/analog servo amplifiers, which combined with an extremely rigid mechanical design, means tight damping without oscillation or overshoot.

When in manual operating mode, Vinten's Lubricated Friction (LF) drag system, incorporated in both the pan and tilt axes, means the ultimate in continuously variable drag.

The AutoCam ACP-8000S Touch Screen Control System is a comprehensive camera command center that provides simultaneous control of the pan/tilt, zoom and focus, as well as the X,Y, and Z axis movements of up to eight cameras.

For additional information call Vinten Inc. today.

AutoCam

Vinten

Vinten Inc.
709 Executive Blvd.
Valley Cottage, NY 10989
Phone: 914-268-0100
Fax: 914-268-0113

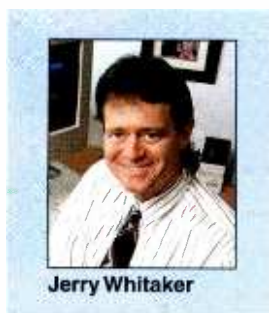
Sales offices in UK, USA, Japan, France, Germany, & Singapore plus worldwide distribution.

Circle (13) on Free Info Card

MPEG: What's it all about?

With the past two columns in this series, we have covered the fundamentals upon which the MPEG group of video compression standards are built. This month, we will begin our examination of MPEG itself.

The Moving Pictures Experts' Group (MPEG) was founded in 1988 with the objective of specifying an audio/visual decompression system, comprised of three basic elements, called *parts*:



basic elements, called *parts*:

Part 1, Systems: Describes the audio/video synchronization, multiplexing and other system-related elements.

Part 2, Video: Contains the coded representation of video data and the decoding process.

Part 3, Audio: Contains the coded representation of audio data and the decoding process.

The basic MPEG system, finalized in 1992, was designated MPEG-1. Work then began on MPEG-2, with the first three stages (system, video and audio) agreed to in November 1992. The MPEG standards have achieved broad market acceptance. As you

might expect, the techniques of MPEG-1 and MPEG-2 are similar. Therefore, after noting a few basic differences, we will describe both systems in sequence.

MPEG-1

When trying to settle on a specification, it is always helpful to have a target application in mind. The definition of MPEG-1 was driven by the desire to encode audio and video onto a compact disc, defined with a constant bit-rate of 1.5Mb/s. With this constrained bandwidth, the target specifications were:

- *Horizontal resolution:* 360 pixels
- *Vertical resolution:* 240 pixels for NTSC, 288 for PAL and SECAM
- *Frame rate:* 30Hz for NTSC, 25 for PAL and SECAM and 24 for film

Figure 1 shows a typical MPEG-1 encoder card, and Figure 2 is a typical MPEG-1 decoder. MPEG uses the JPEG standard for intraframe coding by first dividing each frame into 8x8 blocks and then compressing each block independently using DCT-based techniques. Inter-frame coding is based on motion compensation (MC)

prediction that allows bidirectional, temporal prediction. A block-matching algorithm is used to find the best-matched block that can belong to the past frame (forward prediction) or the future frame (backward prediction). In fact, the best-matched block can be the average of two blocks, one from the previous and the other from the next frame of the target frame (interpolation). In any case, the placement of the best-matched block(s) is used to determine the motion vector(s); blocks predicted on the basis of interpolation have two motion vectors. Frames that are bidirectionally predicted are never used as reference frames.

Motion compensation

At this point, it is appropriate to take a closer look at MC prediction. For motion-compensated interframe coding, the target frame is divided into non-overlapping, fixed-size blocks, and then each block is compared with blocks of the same size of some reference frame to find its best match. To limit the search, a small neighborhood is selected in

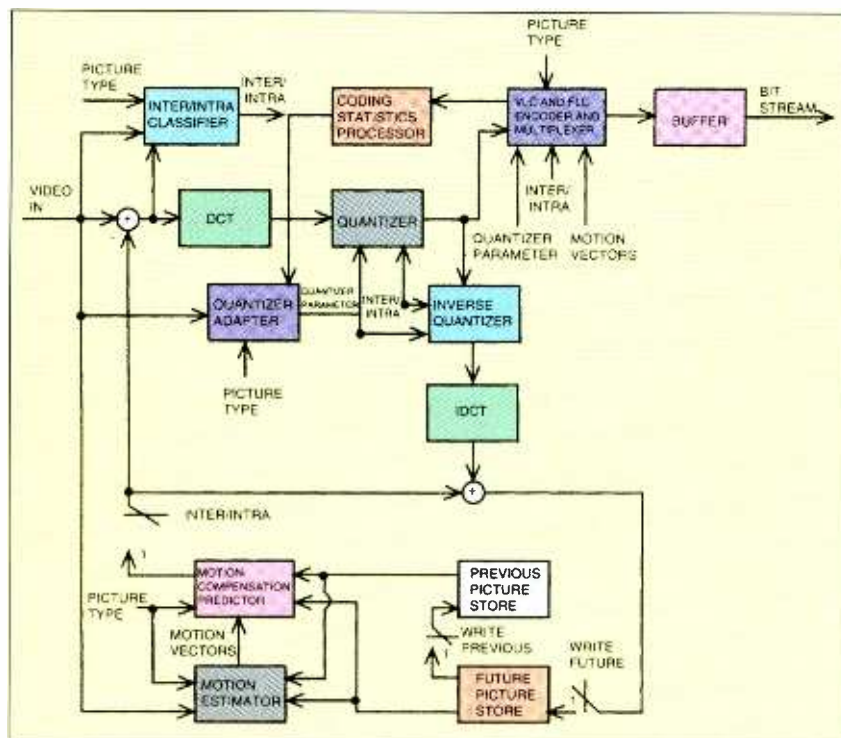


Figure 1. Block diagram of an MPEG-1 encoder.

the reference frame, and then the search is performed by step-wise translation of the target block.

To reduce mathematical complexity, a simple block-matching criterion, such as the mean of the absolute difference of pixels, is used to find a best-matched block. The position of the best-matched block determines the displacement of the target block and its location is denoted by a (motion) vector. Block matching is computationally expensive and, therefore, a number of variations on the basic theme

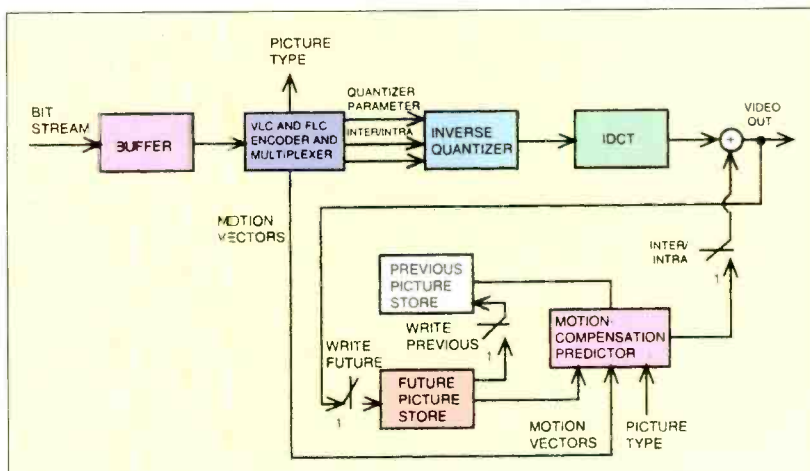


Figure 2 Block diagram of an MPEG-1 decoder.

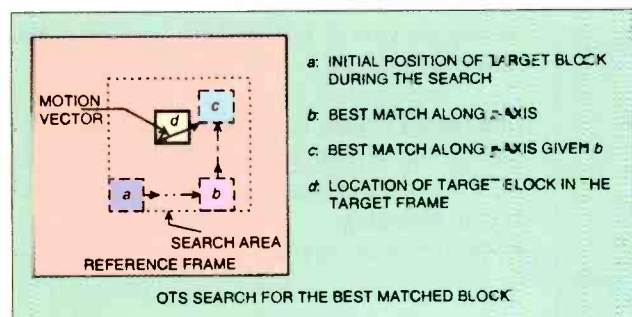
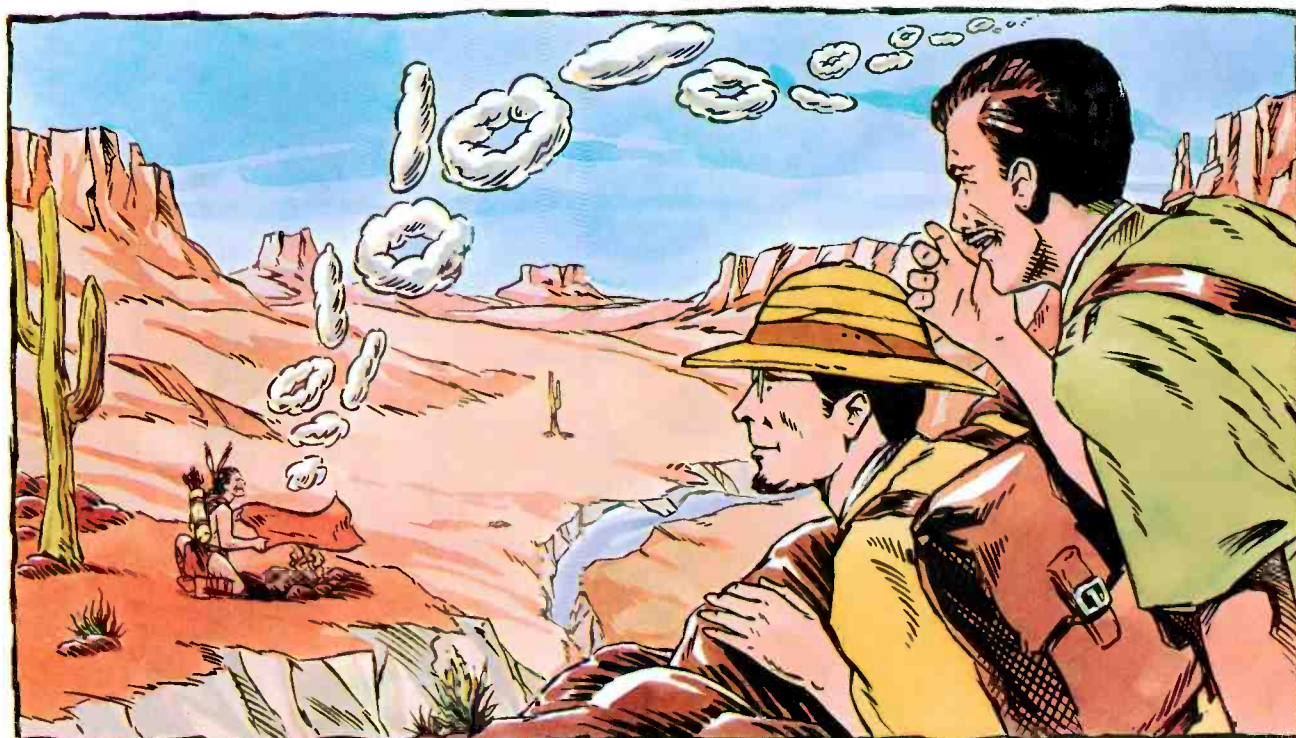


Figure 3. A simplified search of a best-matched block.

have been developed. A simple method, known as OTS, is shown in Figure 3. First, the target block is moved along one direction and the best match is found, and then it is moved along the perpendicular direction to find the best match in that direction. Figure 4 portrays the target frame in terms of the best match blocks in the reference frame.

Putting it all together

MPEG is a standard built upon many elements. Figure 5 shows a group of pictures (GOP) of 14



“LOOK WILCOX, THE DIGITAL COMMUNICATIONS TREND IS CATCHING ON EVERYWHERE,” WHISPERED SNELL.

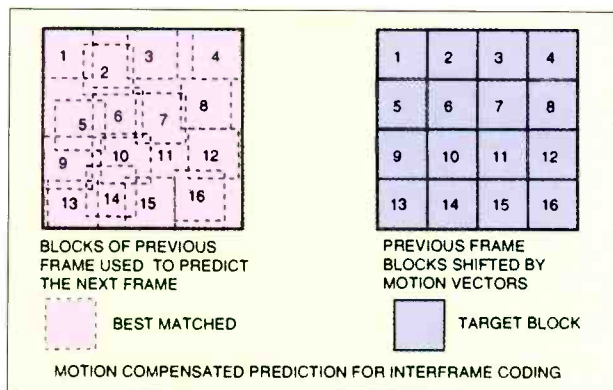


Figure 4. The mechanics of motion-compensated prediction. frames with two different orderings. Pictures marked I are intraframe coded. A P-picture is predicted using the most recently encoded P- or I-picture in the sequence. A

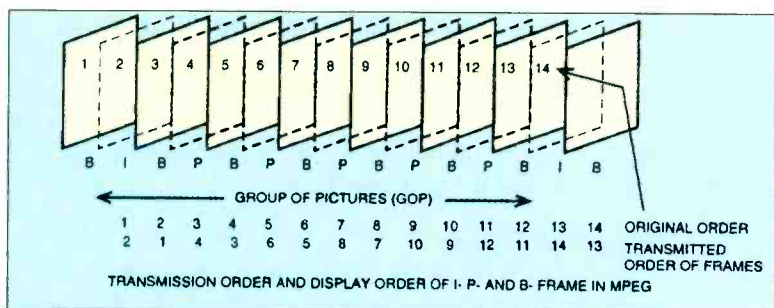


Figure 5. Bidirectional prediction in MPEG coding.

macroblock in a P-picture can be coded using either the intraframe or the forward-predicted method. A B-picture macroblock can be predicted using either or both of the previous or the next I- and/or P-pictures. To meet this requirement, the transmission order and display order of frames are different. The two orders are also shown in Figure 5.

The MPEG-coded bitstream is divided into several layers. The three primary layers are:

1. Video sequence, the outermost layer, which contains the basic global information, such as the size of frames, bit rate and frame rate.
2. GOP layer, which contains information on fast search and random access of the video data. A GOP can be of arbitrary length.
3. Picture layer, which contains a coded frame. Its header defines the type (I, P, B) and the position of the frame in the GOP.

Differences among compression schemes

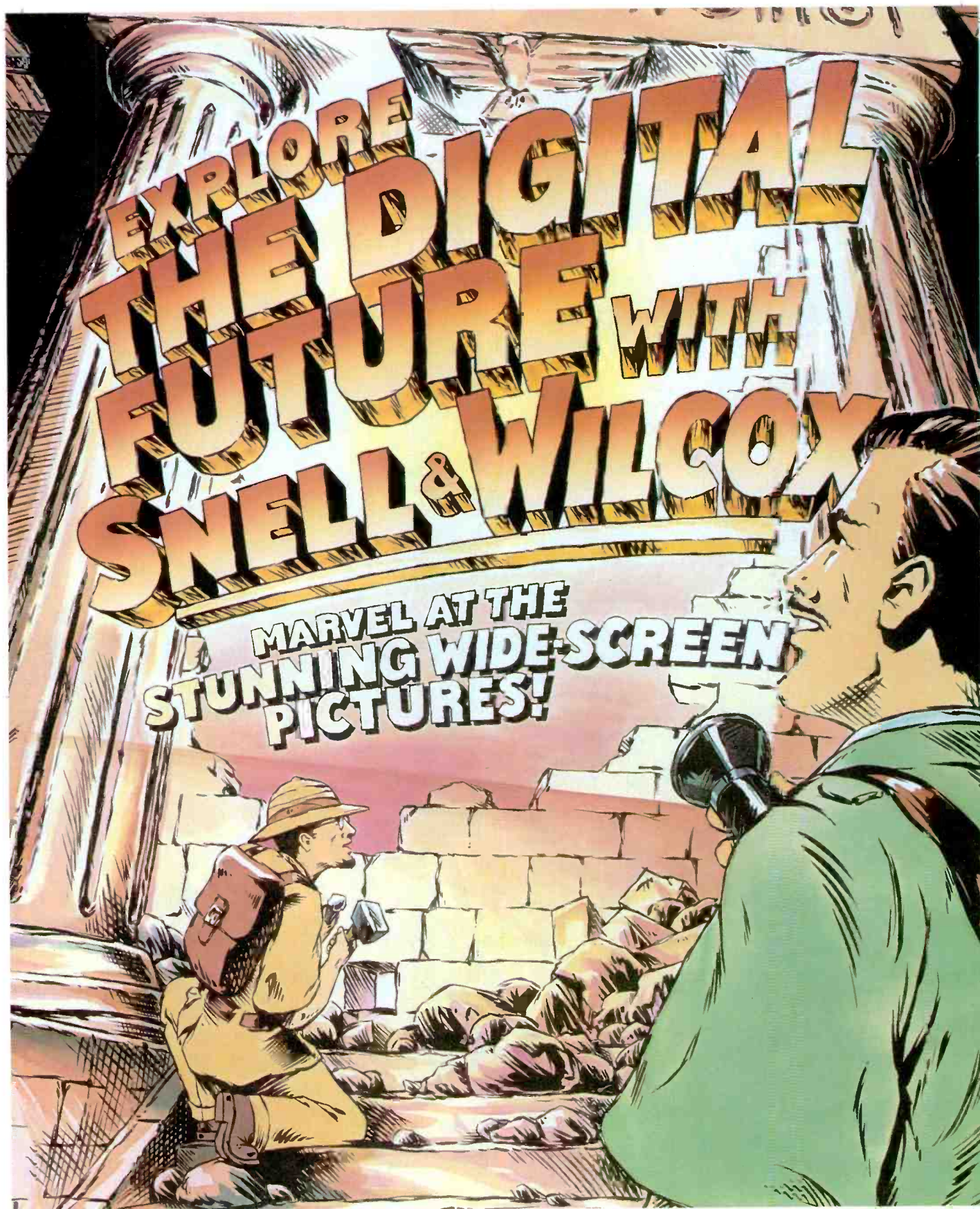
There are several major differences between MPEG and other compression schemes (such as JPEG), including:

- MPEG focuses on video. The basic format uses

Continued on page 278



“CLEARLY THE RESULT OF AN EARLY EXPERIMENT IN COMPRESSION...” MUSED WILCOX.



 **SNELL & WILCOX** 
Engineering with Vision

Circle (6) on Free Info Card
www.americanradiohistory.com

Uncompromised Picture Quality.

Easy System Integration.

Affordability.

It's like you

DIGITAL-S FROM JVC.

For years, it existed only in your head. But now whether you're in broadcast, post production or corporate video, Digital-S brings to life the concept of the ideal digital video recording and editing system.

Since you're a discerning professional, your dream system requires THE ULTIMATE IN PICTURE QUALITY. That's why we equipped Digital-S with 4:2:2 8 bit component processing and a very mild



3:1 compression that yields a 50 Mbps data rate. Plus, it utilizes a robust and reliable 1/2-inch metal particle tape. These technological achievements enable Digital-S to reproduce an image far superior to any analog system, and rivaling that of the highest priced digital systems.

For the first time ever, **INTEGRATION IS BOTH EASY AND PRACTICAL** because of video pre-read. A key feature of our BR-D85 Editing Recorder, pre-read enables multi-format digital editing through your S-VHS, Betacam or U-Matic system with the addition of just one VTR. More impor-



designed it yourself.

antly, it retains the quality of your original footage, generation after generation, ensuring phenomenal results. As if that weren't enough, pre-read also allows you to perform complex layering effects and A/B roll editing with only two VTR's instead of three. And, by incorporating both analog and digital inputs and outputs, Digital-S delivers the optimum performance level in either the digital or the analog environment with virtually no degradation.

Finally, **YOUR DREAM SYSTEM WOULD BE AFFORDABLE.** By pricing Digital-S comparable to the lowest priced component analog systems,

JVC makes going digital a truly affordable reality.

Digital-S from JVC. Your dream system brought to life. The Digital-S system includes: the BR-D85 Editing Recorder with pre-read and digital I/O, the BR-D80 Editing Recorder, and the BR-D50 Player.

4:2:2
COMPONENT DIGITAL

For more information, visit our web site at www.jvc.ca or call us at 1-800-JVC-5825 and simply mention **Product Code 187 O.**

JVC
PROFESSIONAL

See us at NAB Booth #8801

Circle (7) on Free Info Card

www.americanradiohistory.com

Sparking the creative drive

You want that competitive edge, don't you? You love it when your company is racing forward, generating new ideas, beating out the competition and making money. You enjoy managing the process, watching your staff at their peak performance — working as a well-groomed and motivated team.

This does not always come easy. Your staff can be a great source of ideas. However, some of your staff may be reserved about jumping in with ideas or solutions to problems. Several tactics can be used to get your staff moving and keeping them motivated. Not all of them will work with each individual, but combined, they can help you create an environment where your staff can grow.



If you are a micromanager, have all of the answers and tell people what to

do each minute of the day, you need to back up and STOP! It's time to approach things differently.

Tip No. 1: Don't have all of the answers. When one of your staff members asks you something that you think they should know, throw the question back to them. Ask them what are the options? Make them choose a path of action. Don't answer them, just guide them.

Tip No. 2: Encourage staff participation in work group or departmental meetings. Instead of running the meetings yourself, have others do it or at least have your staff direct parts of the meetings. It may be difficult for some managers to let go. Your goal, however, is to get people talking, communicating and comfortable making suggestions.

Tip No. 3: Always get input from your staff. If they are not speaking up, ask them what they think. Be persistent and get them to participate.

Tip No. 4: Give people credit and recognition for what they do. Once you start opening your staff up and getting them talking, you need to encourage them to contribute.

Also make sure that individuals get credit for their ideas and contributions — don't let any one individual hog the credit if there were others that helped.

Tip No. 5: In addition to informal recognition, create a more formal system of rewards. Spend money doing this. It could be a night out for accomplishing goals, a press release on accomplishments or paid trips to professional conferences.

It's hard to let go

This can be hard work. Much harder than making all the decisions yourself and much harder than letting your staff become bumps on the organizational log.

But once you get rolling and really get the team clicking, your job will become easier. Your company will also become more successful and your boss will think you are doing a great job.

Warning: There are no silver bullets

Be careful about how you mix and match approaches. Many silver bullet-type of management approaches have failed because they were overly simplistic and not genuine in their treatment of employees. A few traps to watch out for include:

Trap No. 1: The suggestion box. Don't use it. Your goal should be to create an environment where people openly communicate. Suggestion boxes are a closed and secretive way of communication.

Trap No. 2: Some of the reward systems that have been used in the past have backfired. Whatever you do, be careful about fragmenting your work place. Individual creativity and accomplishment is important, but so is team work and communication.

Trap No. 3: Don't confuse participation with democracy and equality. Your employees are not equal to each other in skill or in their contributions. There will be times when one person outshines all of the rest. There may be resentment on the part of some staff members. It happens, let it and don't apologize. This situation, however, can be neutralized if you continue to put forth efforts to recognize the contribution of each individual regardless of how small it may seem to others.

Trap No. 4: The world is not fair. You cannot control every situation and when, for example, reorganization plans or budget cuts come down from above, you need to be careful how you handle the situation. People may react with shock and dismay because they were not warned or consulted. Just take this step-by-step. Work through each of the circumstances and keep people communicating and participating.

Remember, managing is a tough road, especially when you are in the middle. ■

Michael Erbschloe is a management consultant, author and technical editor and teaches management courses at Oklahoma State University.

Digital Dynamo.



IKEGAMI'S HL-59 DIGITAL PROCESSING CAMERA

Ikegami's HL-59 digital processing CCD Camera with 16-bit Digital Signal Processing (DSP) and 10-bit Analog-to-Digital Processing represents a giant leap in digital technology. Featuring newly developed Application Specific Integrated Circuits (ASICs) and improved CCDs, the HL-59 means exceptional quality, improved functionality and reduced power consumption.

The HL-59 employs three 2/3" 520,000-pixel FIT CCDs, which deliver over 850 TVL, and a S/N ratio of 62dB or more. The camera is also available in a switchable aspect version—the HL-59W, with 2/3" 520,000-pixel FIT CCDs, for instant switching between 4:3 and 16:9.

The HL-59 is a true field production camera, and can be docked to a variety of 1/2" VCRs. Triax operation can be

achieved, and a variety of control panels are available including: Digital Remote Control, Digital Remote Set-up, Maintenance Control (with memory card) and a joystick Operating Control Panel.

Popular Ikegami features, including "Fountain of Youth" Skin Tone Detail with AHD (Auto Hue Detect), are digitally generated along with Diagonal DTL, Slim DTL, DTL Boost Frequency and Black Stretch. The HL-59 also features a new high-performance viewfinder.

Production companies will enjoy the versatility and quality of the HL-59, while rental houses will have more to offer their high-end customers: A Digital Dynamo...the HL-59.

For more information, contact your Regional Sales Office or the Ikegami dealer nearest you.

THE PROFESSIONAL'S CHOICE

Ikegami Electronics (U.S.A.), Inc. 37 Brook Avenue, Maywood, NJ 07607 East Coast: (201) 368-9171
West Coast: (310) 534-0050 Southeast: (954) 735-2203 Southwest: (972) 869-2363 Midwest: (630) 834-9774

Ikegami

See us at NAB Booth #10431

Circle (8) on Free Info Card

www.americanradiohistory.com

Metadata: What is it, and why do you care?

A few months ago, I was introduced to a new term — *metadata*. One of the guys at work dropped this on me, using the word as if it was part of casual dinner-table conversation. At the risk of appearing to be completely clueless, I asked him what it meant. Ignoring my ignorance, he explained that metadata is the stuff that accompanies your data. Well, I asked him a

number of questions, did some more digging, and came to the conclusion that he is on to something fairly significant. Let me share what I learned.

I have since refined his definition a little bit — here it is. Metadata is “data about the data.” This is not the most stellar definition you’ve ever heard, but I don’t know how else to put it. Let me try to explain.

As we have discussed in earlier articles, video is big, and it does not travel alone. These two characteristics make

finding things in the video world cumbersome if you are using older database designs.

In the old model, a program would retrieve all the data contained in a particular record set of the database. It would then look through the data to find the part you want; perhaps a specific house number or a description. Retrieving whole records with large elements can take a lot of time. The concept of metadata addresses this problem.

The value of metadata

If a program could retrieve a description of the data, without actually retrieving the data itself, this would give a vast improvement in performance. Because metadata is a description of the video and everything else that accompanies it, it is much smaller than the data (video) itself, and is much more quickly searched. This is the value of metadata; it greatly improves our ability to search databases quickly.

Here is another example of the concept, using existing technology. In a conventional car machine, you can think of the database contained in the car controller as metadata. Using the database, you can search for an item without actually having to load the tape. If you had to load every tape just to look for a particular house number, you would have a pretty impractical system.

A formal definition of metadata

OK — now that you have some idea of what metadata is, let me give you a couple of descriptions of metadata on a more formal level. (If you have a formal definition of the term, I would be interested in hearing it. I looked for the term in Microsoft Bookshelf '95, a *Funk and Wagnalls Desk Dictionary*, and two shelves of computer books, but could not find anything.)

In *Database Technology and Management*, Robert Goldstein writes, “A single database may be used by a variety of different users or groups of users, each of whom may have very different needs and interests. Because users typically expect the system to supply information in a form that is relevant to their work, metadata provides a means of interpreting the database contents for specific communities of users.

“It is important to note that simply by accessing the metadata a user or user application can determine if there is a need to access the data, frequently the metadata alone provides enough information to rule out access data. Metadata can provide a form of “compression,” since you did not need to access the file, you did not have to send it, and the network’s bandwidth capabilities were not as consumed in the process. Without the metadata you might have no other choice but to swamp the network with access requests for data that you did not need.”

Why do you care?

The biggest reason you care about metadata is that you will likely be using it to retrieve video in the near future. Knowing about the concept of metadata can help you understand why server systems are designed the way they are. It can also help you participate in the discussion that is going on in the industry at the moment about what metadata should contain.

In the end, it is discussions about what metadata should contain that will set the stage for future capabilities of computer-based systems. If you have the opportunity, you should participate in these discussions. I think that I have gotten a glimpse of the future, and a large part of it revolves around databases and how they work. Metadata will certainly play a part. ■

Brad Gilmer is director of advanced network operations & technology for Turner Entertainment Networks.



Brad Gilmer

Artifact-free Compression

Hours of Digital Storage

4-channel 24-bit Audio

Real Time D-1 Recording

Scalable Video Quality

Single/Dual Serial Digital I/O

RS-422 Protocols

Built-in 20GB Tape Drive

Multi-format Support

Total Connectivity

We deny all
allegations
that ALIEN
technologies
were used in
creating QuBit

QuBit

Not Made by Aliens



Introducing QuBit

The most phenomenal digital recorder-server on the planet.

And just maybe, the universe. This ultrahigh quality digital recorder-server combines powerful digital signal processing, artifact-free QuVIS compression and open networking standards in a single, scalable device. QuBit delivers the high-quality digital video you want and the versatility you need.

QuBit is networkable for instant access and expandable for virtually unlimited digital storage. With both disk and tape storage you can record and play back simultaneously – perfect for tape delay situations. QuBit is also a cost-effective replacement for any VTR you own. It can record better than D-1 quality in real time and features a dozen industry-standard connections.

QuBit – there's no digital recorder-server this advanced, this versatile and this affordable anywhere. Even if you're not from this planet.

To learn more about QuBit, stop by booth #9564 at NAB or call
800-554-8116, 913-272-3656 or fax 913-272-3657.

Circle (14) on Free Info Card

www.americanradiohistory.com



www.quvis.com

Who will be the next users? What will be the

DVCPRO

Next Generation Video
At NAB Booth 10701.

Visit us on our website at www.panasonic.com/dvcpro



next breakthrough? Who will be the next leader?

Panasonic
Broadcast & Digital Systems Company

Communicating with the field

Broadcasters always think hard about how they can get a signal from the remote site to the studio. They spend thousands, even hundreds of thousands, of dollars on equipment to transport signals from the field. Of course, this is important — no signal equals no remote. But communicating back to the remote site often gets short shrift, with little study and a budget line in the hundreds of dollars.

In some cases, after an extensive installation or remote setup, a reality check may set in. It takes the form of a longer range on your microwave transmitter than on your two-way radio. In other words, the studio can see the remote feed, but can't talk back to the site.



The Mobiq land mobile satellite telephone from British Telecommunications is the size and weight of a notebook computer. It provides high-quality voice, fax and data communications from almost anywhere.

Communicating with a remote site is arguably the most important aspect of a remote. If the remote crew can't hear you, you can't set up the remote and you can't cue them. Lose either of these two functions and you have no remote.

Times have changed

When broadcasters started doing microwave remotes, everyone used two-way radios or phone lines as communication devices.

If you knew the exact location, you ordered a line. If it was a spot news remote, you communicated on the radio. Then came a variety of mobile telephones. Today, there are a few more choices, with cellular and satellite phones. In fact, you can have three or four of these, plus a couple of two-ways in an ENG truck, along with a number of scanners.

A typical studio facility today sends program audio and talkback to a wireless IFB system. Not only will the buttons on the panel route the appropriate audio to a two-way radio system, it will select a particular tone to be encoded on the radio carrier. This allows only the matching receiver to open squelch in the field so only one reporter will hear the comment or cue. Although

this may sound complicated, it is not uncommon for some stations to have eight or 10 remotes in one newscast.

A normal setup involves the remote truck calling the station's engineering control center to be assigned a microwave channel and to set up the shot. They will then change frequency to the production channel with the multiple audible tone encoder.

An alternative system uses multiple cell phones in the truck — one to handle the setup and another for IFB. Recently, another cell-phone circuit has been added for a data channel assigned to a laptop at the remote site. Using this computer, a reporter will write and edit a story in the field, then connect directly to the newsroom computer and download the scripts. This puts the script into the station's closed-captioning system, and allows station production staff to key up the supers and stills that will be associated with the story while setting up the timing for that segment. If the station is using digital video recording, the edit system will want access to a phone line to transmit the edit decision list back to the newsroom for hand-off to the video server.

A fourth cellular phone would be used for a PL line from the director to the field-camera operator. Of course, the actual program audio and video is sent via microwave link to the station.

SNG systems

SNG trucks require a different arrangement. Typically, each SNG remote will require a separate audio "mix-minus" if any Q&A will occur between the studio and the remote (or remote to remote). Each mix-minus feed will go to an input on the IFB selector, which is assigned to a phone coupler for the truck to call.

When designing a remote communications package, plan the communications system as a primary system — one of equal importance to the actual microwave backhaul system. If they can't hear you, no one will see them. ■

Marvin Born is vice president of engineering at the Dispatch Broadcast Group, Columbus, OH.

**FOR MORE
information**

Circle (1,180) on Free Info Card. See also "Intercom/IFB Products, Headsets," p. 30 of the *BE Buyers Guide*.

The new Sachtler Vario Pedestals offer unique features for studio and OB operation:

1 Continuous column stroke, for shooting from sitting to standing person's height – Vario Ped 2 - 75.

2 Rock steady and 50 kg/110 lb lightweight, to carry equipment up to 90 kg/200 lb – Vario Ped 1 - 90.

Space age CCD-cameras don't fit on iron age pedestals

3 Carriage and column can be disassembled in seconds – compact modules for ease of transportation.

4 Quickfix, allows instant change of fluid heads for flexibility – included.

5 Track width, narrow and wide, symmetric and asymmetric – set

in no time and you well can



expect precise, easy steering and crabbing, smooth and jerkfree column movement thanks to the patented Sachtler pneumatic system. Test for yourself the optimum camera support for all compact Studio/OB cameras, now!

55 North Main Street
Freeport, N.Y. 11520
Phone (516) 867-4900
Telex 140 107 sac frpt
Fax (516) 623-6844

California office:
3316 West Victory Blvd.
Burbank, CA 91505
Phone (818) 845-4446



sachtler
corporation of america

See us at NAB Booth #9231

Circle 15 on Free Info Card

www.americanradiohistory.com



Kudos IQ Modular

To help you go digital we've racked our brains.

The advent of digital television calls for new interface solutions. If you're going digital, this is the modular system you need to make the transition as painless as possible.

Kudos IQ provides a flexible, controllable, 10-bit digital system, ideally suited to automated environments.

It offers all the performance of dedicated units, but in ultra-compact rack-mountable form.

For more information about Kudos IQ and our ever-expanding range

of modular functions, please contact us at: USA Tel: +1 408 734 1688

UK Tel: +44 (0)181 607 9455 Fax: +44 (0)181 607 9466 E-Mail: Info@Snell.co.UK

France Tel: +33 1 45 28 10 00 Germany Tel: +49 611 99 0840

India Tel: +91 11 6481740 Italy Tel: +39 6 66 38 594 Japan Tel: +81 3 3446 3996

Russia Tel: +7 095 1926992



New trends in local cable production

Cablecasters originating local programming are developing new production system design strategies. The latest configurations reveal the trends shaping cable production. Cable operators usually have franchise requirements to build and support public, educational and government (PEG) access centers where community producers are trained and certified to use the PEG center's studios and equipment to create non-commercial programming.



Ken Freed

To offset PEG center costs, cable systems can run a for-profit "local origination" (LO) facility and channel, which may be advertising-supported. LO and PEG operate from common facilities, but that's changing.

LO as a production house

Alan Hayden is production manager for TCI of Colorado. TCI separately owns and runs a central LO production facility next to Mile High Stadium. Apart from helping on high-end PEG production, the LO facility is managed as a TCI profit center. TCI is integrating open-architecture computer-based systems to keep down overall costs, Hayden reports. "We'll eventually go totally digital, but some workhorse equipment, like a 3/4-inch VTR, can be rebuilt." "The less you invest in equipment," Hayden says, "the more you can invest in having the right people in place. Good producers find ways around not having the best equipment by being creative and innovative. It's a balancing act."

LO as a local TV station

Jones Intercable has embraced a different business model in California. "We've taken our LO channel and begun to run it as a local TV station," says Patricia Fregoso, production manager for the Jones system in Palmdale. The LO "station" shares Channel 3 and operates from 4 p.m. to 10 p.m.

"We don't have a local TV station," she says, "so the cornerstone of our business has become local news, produced by a staff of journalists. We just took delivery on a four-camera microwave ENG truck that can do remotes within 50 miles of our studio."

Shows in the studio are shot in Betacam SP, edited at 3/4-inch, then bumped back to SP. Field footage is shot on S-VHS and edited at 3/4-inch. Fregoso says their

production costs are \$700 per edited minute compared to more than \$1,200 in the LA basin.

A station upgrade

The Cox cable system serving Long Island, NY, also acts as an independent TV station. Says Mike Kohler, an LO manager, "We produce the best local programming we can, mostly sports and entertainment events, then use syndicated programming for the rest."

The balance between people and equipment? "All we need are a couple of staff producers who head up freelance crews. We have master control timed so carefully that we rarely need make-goods on commercials. The channel's quality has improved so much that people see it as a viable local station."

The Cox system uses Digital Betacam for master control and retrieving satellite feeds. An automated ad insertion has been installed and a non-linear editor was bought for break tapes. "In the long run," says Kohler, "new equipment will improve our quality, which will boost revenues, and we'll save money with lower labor costs."

Full-court press

An even more expensive approach is being demonstrated by the Comcast Network, which delivers two channels of local content to 1.2 million homes in Philadelphia and 15 New Jersey communities.

"We create shows and forums on the channels for the localities and the whole region," says general manager Pat Scanlon. The network hub in Union City, NJ, is a high-end production facility linked by fiber with 10 satellite studios. The network shares six remote trucks, half equipped for five-camera shoots. The network built digital links to major regional sports and entertainment venues, thereby eliminating satellite transmission costs.

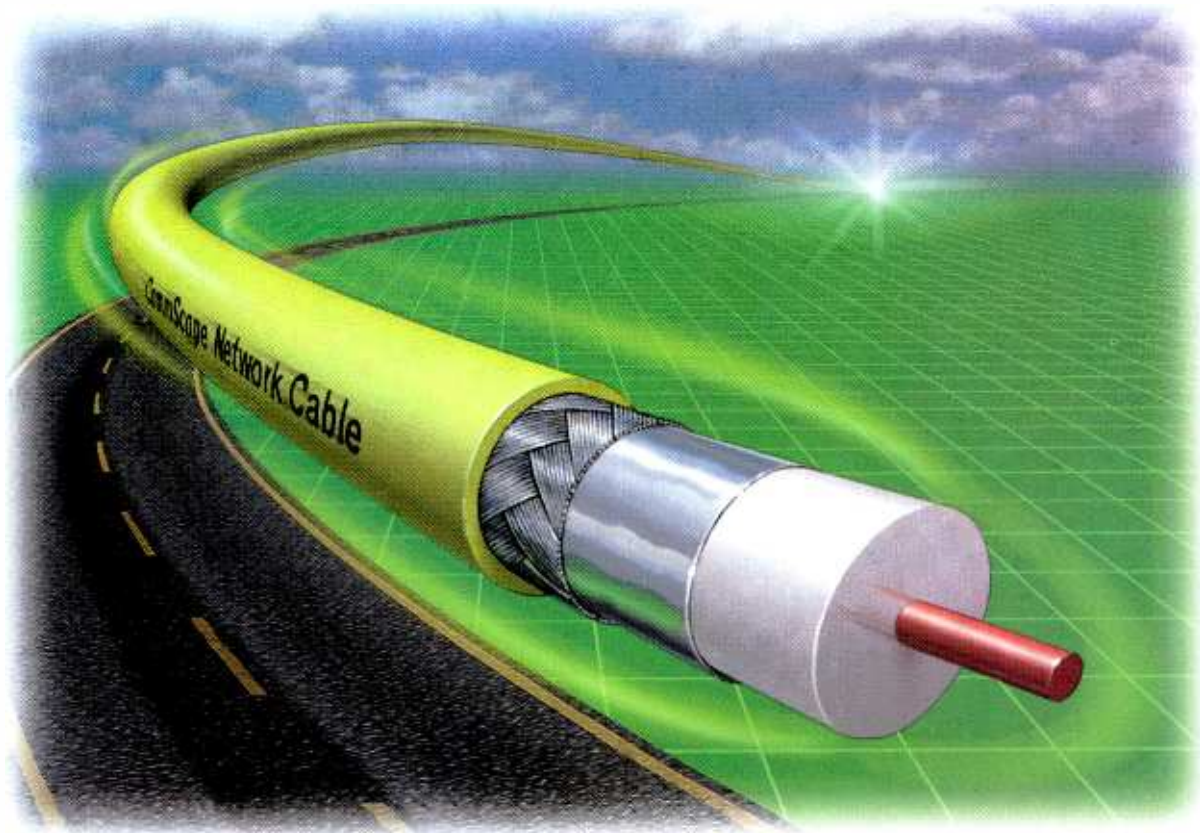
"Instead of having all these independent production units on hand," says Scanlon, "we decided to pool our remote equipment and personnel resources in Union City and Jersey City, 20 minutes apart. The end result is better, more attractive productions at less cost." ■

Ken Freed is a technical writer specializing in cable and interactive television, and is based in Denver.

What's the winning combination of talent and technology for your own cable operations? Different business plans call for different system designs. Tell us about your innovative cable technology solutions and they may be reported here. Fax to: "Cabletec," 913-967-1905.

G A S I N J E C T E D F O A M

High Speed Digital Performance



*Exceeding SMPTE Performance Standards, CommScope's Serial Digital Video Cables –
From The Innovators In Gas Injected Foam Technology.*

The key to Serial Digital Video Cable technology is nothing new to CommScope. CommScope originated it over 20 years ago. Other companies imply they are the creators. Only CommScope gives you Serial Digital Video Cables backed by decades of gas injected foam technology innovations. Specially designed to handle the high data speeds of Serial Digital Video distribution at 270 or 360 Mb/s, CommScope 5765 cable exceeds the SMPTE performance



standards and delivers superior digital transmission characteristics. For even more advantages of these "experienced cables," contact CommScope today or our exclusive Broadcast Distributor, GEPCO International at 800.966.0069. And discover cable technology so advanced, it'll be around through the next millennium.

CommScope

See us at NAB Booth #11984

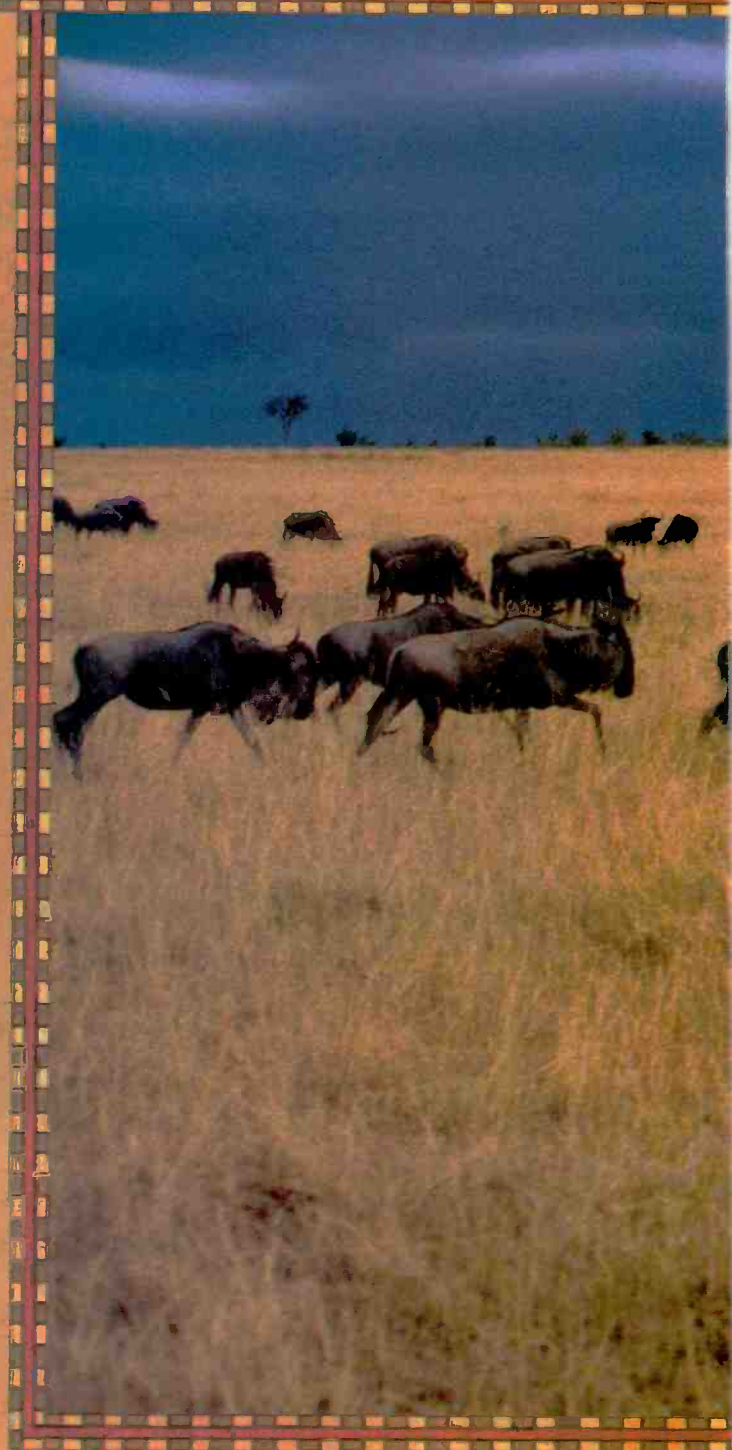
For information call 1-800-982-1708 or 704-459-5000.

Circle (9) on Free Info Card

www.americanradiohistory.com

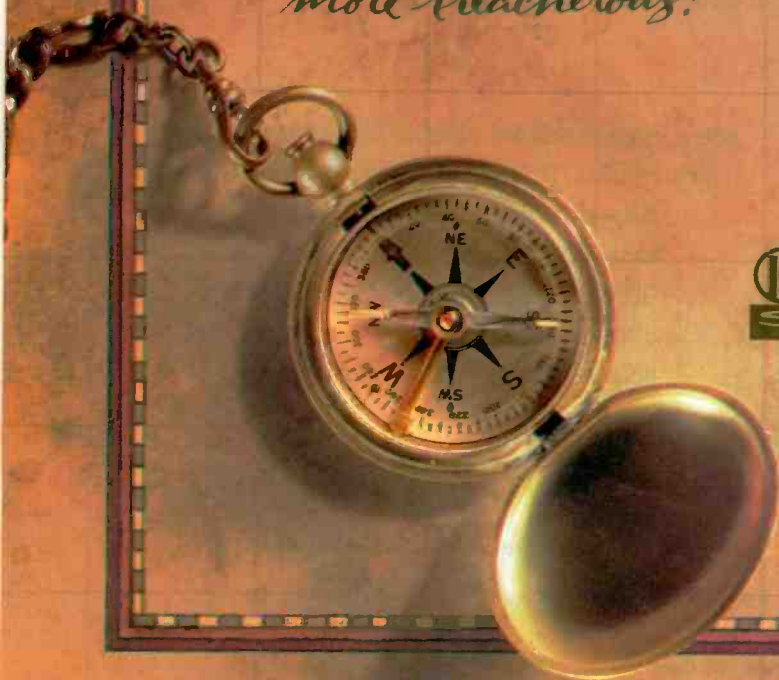
*Braving extreme
conditions and
ravenous packs of
wild hyenas, the
African Wildebeest
endures the second
most difficult migration
known to man.*

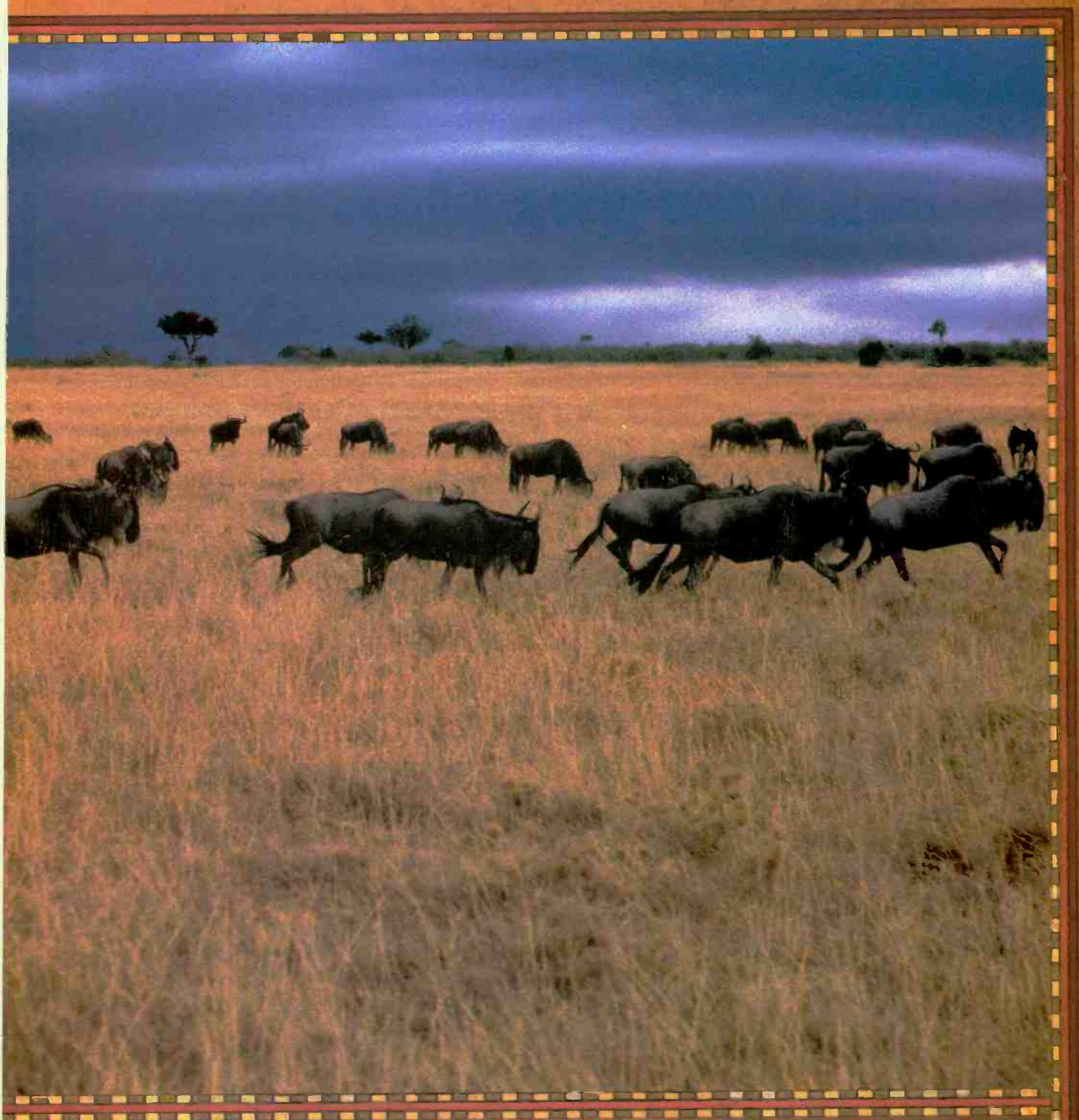
*The broadcasters
journey to digital
being slightly
more treacherous.*



**FLEX
SYS**

The trek toward disk-based broadcast transmission is on. And Sony is beside you every step of the way with the new FlexSys™ transmission control system. By integrating tape and disk storage, the FlexSys system provides the flexible and cost-effective migration path you've





been looking for. The FlexSys system combines high quality MPEG-2 4:2:2 P @ ML compression and RAID disk storage with Sony's leading VTR and Flexicart® technology. And the familiar user interface ensures your transition will be as painless as possible. To find out what FlexSys system configuration is best for your transmission



needs, just call 1-800-635-SONY, ext. FLEXSYS. We'll put you on the one path to digital transmission that leads to success.

SONY

Bigger data pipes: What's possible?

A few years ago, we assumed that only broadband video over a fiber-optic network could provide next-generation entertainment services. In response, cable and telephone companies prepared to build this fiber-optic infrastructure — until they computed the price they could charge for video-on-demand and then subtracted the cost of burying all that fiber and found a big fat minus number.

While this was going on, the Internet sneaked up on everyone and attracted millions of users. And now these users are demanding faster access and better performance. Three reasonably mature technologies exist to meet this need: Integrated Ser-

vices Digital Network (ISDN); cable modems; and Asynchronous Digital Subscriber Line (ADSL).

ISDN

This month, we'll compare the bandwidth and latency characteristics of these delivery systems. *Latency* is the time it takes for a signal to make a round trip out from your computer to its destination and back again. The latency of today's Internet is slow and unpredictable.

ISDN uses existing phone lines, eliminating the need to overbuild with expensive fiber. ISDN does require a \$200-\$400 modem (technically not a modem, but rather a terminal adapter) in the home and the appropriate digital switchback in the central office. In the last few years, most telephone switches have been upgraded to provide for ISDN service.

ISDN provides reduced latency over the Internet because the ISDN terminal adapter is not a modem. As a digital circuit, it avoids the 20-30ms delay added by the modulation-demodulation process of a standard modem. The elimination of this process can result in an accumulated latency reduction of as much as 80-120ms between two users over an Internet connection.

Cable modems

Cable modems take a 6MHz chunk of cable spectrum and turn it into an Ethernet. If you're the only one on that night, you could get all 30Mb/s to

yourself. But each time someone else logs on, you'll share more of the pipe. The effective bandwidth is determined by the number of simultaneous users and the burstiness of the traffic. Upstream data rates are not symmetrical and vary from modem vendor to modem vendor. Speeds in the 1-2Mb/s range can be expected upstream.

Most older systems are not two-way and require an "out-of-band" return path. This usually means your existing phone line is called into service at the same time to provide this return path. Latency in a cable modem system is difficult to predict because of the variable load conditions that can occur and other factors contributed by splitting of the return path over the phone lines.

Cable modems tend to locate most easily at the TV set and there is some pressure to deliver video on demand in addition to, or instead of, Internet access. Usage economics change dramatically with streaming data vs. bursty data — at six for MPEG-encoded movies, 30 x 6 datastreams = five simultaneous movie watchers. In this example, streaming data is 20 times more expensive to deliver than bursty data.

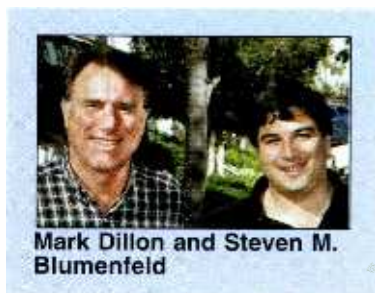
ADSL

ADSL represents the most effective use of existing copper phone lines. It requires a modem in the user's home and one in the central office. Fortunately, ADSL modems do not induce the same latency load as current modems do. The effective data rate depends on the distance between the household and the central office. Beyond 18,000 feet, 1.5 is the maximum data rate. At distances less than 12,000 feet, data rates greater than 6Mb/s are possible. (Some predictions for future improvements throw that number all the way up to 45Mb/s.) Upstream rates vary between 640kb/s to 1.5Mb/s.

With this bandwidth, almost everything is possible, from blink-of-an-eye downloads of huge files to the delivery of broadcast-quality MPEG-2 video streams. At this point, twisted-pair phone lines begin to compete with the promises of hybrid fiber coax systems.

The challenges for deployment of these data pipes will ultimately affect which technology will dominate. ■

Mark Dillon is vice president of on-line services, and Steven Blumenfeld is vice president of technology and studio operations, with GTE, Carlsbad, CA.



Mark Dillon and Steven M. Blumenfeld



LIKE OTHER TOP PERFORMERS, THE LONGEST LASTING BATTERY USES A STAGE NAME.

Around the house, DURACELL® batteries go by the name The Copper Top®. But on the job, the longest lasting batteries answer to PROCELL® PROFESSIONAL™ BATTERIES. PROCELL batteries are DURACELL® batteries. The longest lasting professional alkaline batteries you can buy. You get the same DURACELL performance. The same DURACELL dependability. The same DURACELL value, and more, because PROCELL Professional Batteries are specially priced and packaged for professional use. Now that's one act that's hard to follow. For more information or a distributor near you, call 1-800-4PROCELL. Ext. 33.

When it matters the most.

DURACELL®
PROCELL PROFESSIONAL™ BATTERIES

Circle (17) on Free Info Card

www.americanradiohistory.com

CUSTOMER DRIVEN!



Please join us at NAB '97 for **your** chance to dust the competition.

Circle (18) on Free Info Card

BOOTH NO. 9681

NVISION @ NAB '97
LAS VEGAS, NEVADA
ADMIT ONE

NVISION®

BRING THIS TICKET TO
BOOTH 9681 FOR YOUR

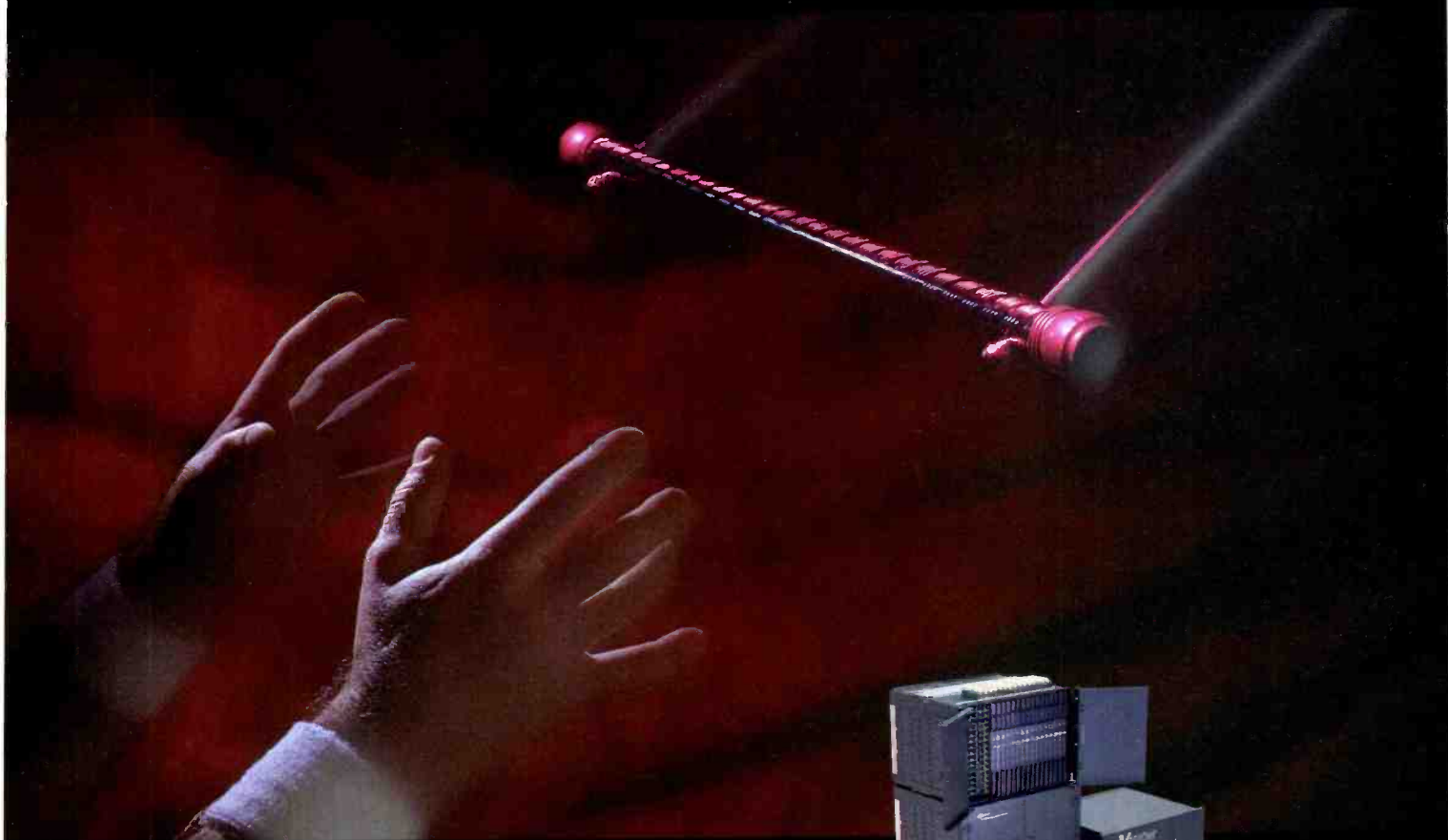
**TICKET
TO DRIVE!**

NVISION @ NAB '97
LAS VEGAS, NEVADA
ADMIT ONE

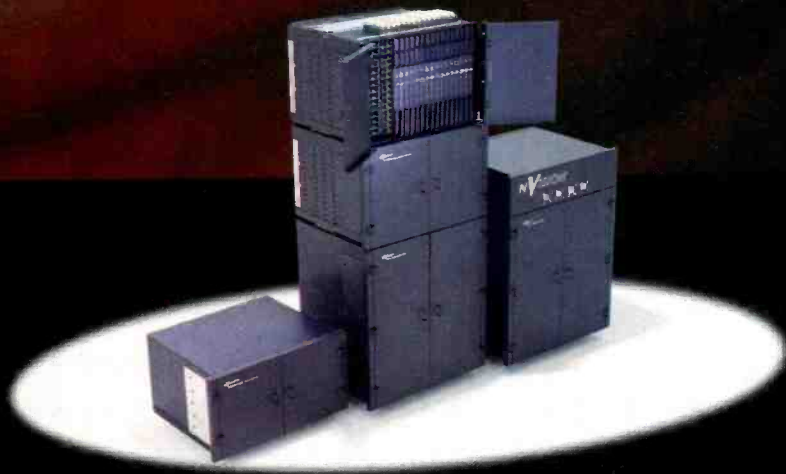
BOOTH NO. 9681

TIMING

L s E v e r y t h i n g



Grab hold of true synchronous switching with the industry leading NV3512SA – a seasoned performer that never misses a beat (or adds one for that matter). Unique pre-reframing technology means data is never corrupted or compromised. Designed to work within all current control systems, the NV3512SA will fit any size facility, and can grow as you do – from 8 x 32 up to an incredible 2048², yet it requires less space and power than traditional audio routers. Also available, the NV3064SA for smaller facilities and budgets. To get your hands on the most versatile and cost effective digital audio router on the planet, call 1-800-719-1900.



NVISION®

Circle (19) on Free Info Card

www.americanradiohistory.com

ABILITY

Is Everything

Jump into the mix with the new NV3064SA – true synchronous switching at a very affordable price. Designed for smaller facilities and budgets, the NV3064SA features the same pre-reframing technology as our industry leading NV3512SA, so data is never corrupted or compromised. Designed to work within all current control systems, the NV3064SA requires less space and power than traditional audio routers, and can grow as you do from 32² to 64². Redundant power supply and control interface options are also available. To get in sync with the most affordable digital audio router on the planet, call 1-800-719-1900.



NVISION®

Circle (20) on Free Info Card

www.americanradiohistory.com

CONTROL

Is Everything

Gain control of machine-control routing with the NV3256D, the most intelligent machine-control router ever assembled for routing RS-422 and RS-232 machine-control data. Using patented dynamic ports, the NV3256D automatically configures the source and destination ports, connecting both forward and reverse data streams. Designed to work within all current control systems, the NV3256D can grow from 64 to 256 ports to provide ultra-efficient plant wide interconnect of editors, VTR's, DVTR's, PC's and other remotely controlled devices without configuration problems or wasted ports. It's really two routers for the price of one! To put this kind of control at your fingertips, call 1-800-719-1900.



NVISION®

Accelerate or not? That is the question

The television we watch today uses the NTSC standard, finalized in the late 1940s. Although that standard has been improved, today's television is based on the same fundamental resolution parameters as the original service. The last major advancement in the NTSC standard was the introduction of color television, more than four decades ago. Now the industry is prepared to move to digital.



Louis Libin

Crucial decision

The broadcast industry must make strategic decisions regarding DTV implementation. Should the construction period for the new DTV stations be accelerated? Should the entire DTV process be accelerated? Or moving in the other direction, should the entire DTV process be slowed down?

There are good arguments on both sides of the issue. Reed Hundt, FCC chairman, recently said that small markets would benefit from the aggressive move to digital by the networks and their owned-and-operated stations. Smaller stations would benefit by forcing the larger stations and large broadcast groups to take the initial risks by purchasing the first-generation equipment. On the other side, certain broadcasters say that due to the many unknowns, it would be more prudent to be a "fast follower" or be the second or third DTV broadcaster in a market. There are many considerations that must be analyzed before broadcasters can make a good determination.

It's the end of the margins in spectrum assignment

The financial consideration is the number one concern. But should a major issue, such as "how is my station going to pay for the DTV station?" be the overriding concern? From the beginning of the process, broadcasters took an active role with the industry and government as the FCC Advisory Committee on Advanced Television Service worked to develop recommendations for the new broadcast system. Obtaining sufficient spectrum so that all broadcasters might introduce DTV without disrupting their present NTSC broadcast became a key issue for the successful introduction of DTV broadcasts in the United States. Sufficient spectrum remains the key.

Don't blame the FCC

The FCC made several key spectrum decisions that helped spark innovation in DTV. In 1990, the commission decided that new DTV systems would share TV bands with existing services and would use 6MHz TV channels as presently defined. The commission also decided on a *simulcast* approach. This meant that the new DTV signals would be broadcast on currently unusable TV channels and broadcasters would temporarily be assigned a second channel to accomplish the transition to HDTV.

The FCC Rulemaking is nearing completion and requires the support of broadcasters. It is anticipated that our Canadian and Mexican neighbors will simultaneously initiate similar procedures to assure rapid adoption throughout North America. In the past, the FCC has said that when a station receives the license, it must emit a DTV signal. The commission may impose a power requirement or a contour size requirement in order for a station to maintain the license.

The political game

In February, the House Telecommunications Subcommittee held a hearing on Capitol Hill to discuss the broadcasters' plan for the digital transition. According to the revised Clinton administration digital TV transition plan, the analog NTSC spectrum is expected to raise almost \$15 billion (\$14.8 billion to be exact) from auction. This number comes from the White House Office of Management and Budget. The 1993 Budget Act gave the FCC authority to auction spectrum.

This spectrum reclamation is an enormous FCC initiative and is, in some cases, a driving force behind policy decision. It is hoped that most broadcasters will go along with the commission's thrust, so long as the commission's timetable is reasonable. The promise of immediate implementation will not solve the many details that will decide the system, but they will show unity among the broadcasters. This could be the catalyst that will solve the remaining issues.

The Senate side

John McCain (R-AZ), Senate Commerce Committee chairman, maintains that the broadcasters should pay for use of the spectrum. However, McCain opposes a provision in the Clinton budget proposal that would force the broadcasters to make up the difference if, in



Bringing You Tomorrow's Solutions
Today!

Visit

AP

Featuring

@ NAB

AP Skysuite
Room S-205
South Hall Block House
Las Vegas Convention Center

Group demonstrations
are available by appointment.

For appointments please call:
(202) 736-1152
(800)-821-4747

The Associated Press
1825 K Street, N.W.
Washington, D.C. 20006-1253
EMail: aphroadcast@ap.org

• **AP NewsCenter**

*The newsroom system you'll
never outgrow.*

• **ENPS**

*A revolutionary new television
production system.*

• **APTV**

*The only global video service that
unilaterally gathers its own material...
Picture the Difference.*

• **SNTV**

*A unique sports video service
for broadcasters.*

• **The WIRE**

*The 24-hour multimedia service
for the Internet.*

The Associated Press



RF COMPONENTS

- Transmission Line
- Rigid **HELIAX**®
- Waveguide
- Filters/Combiners
- UHF/VHF



TV ANTENNAS

- UHF • LFTV
- VHF • Dual mode



FM ANTENNAS

- Side mounts
- Panels
- Combined Systems



PANEL ANTENNAS

- FM • UHF • VHF

When You Want More Than Just An Antenna



Made in USA since 1954

JAMPRO ANTENNAS/RF SYSTEMS, INC.

P.O. Box 292880

Sacramento, CA 95829 USA

Phone (916) 383-1177 • Fax (916) 383-1182

www.jampro.com • E-Mail: jampro@ns.net

HELIAX® is a registered trademark of Andrew Corporation

atv update

the auction of the analog spectrum, the targeted \$15 billion is not earned. McCain is also in favor of allocating part of the 60-69 spectrum to public safety.

The House side

Billy Tauzin (R-TX), the chairman of the House Telecommunication Subcommittee, shares the view of his committee members. They question the Clinton administration's digital TV transition plan generally, especially the spectrum auction budget estimates.

Tauzin says that the FCC "should not let all of its spectrum decision be guided by potential revenue." Tauzin made the argument that an early auction of 60-69 makes little sense because of the *Swiss cheese* effect. He believes that if Channels 60-69 are auctioned at a later date, the value of that spectrum will be increased.

New competition

The door is now open for direct audience access for additional content providers and producers through the computer industry's entry into broadcasting. The potential time delays of spectrum allocation will only benefit these new competitors. Bear in mind that these new receivers will have capabilities similar to personal computers. Modems today are hardly more than a single semiconductor chip, probably a part of the all-digital TV receivers. This is the primary reason other industries are so interested in being a part of this revolutionary industry.

The Grand Alliance System will interface cleanly with wired National Information Infrastructure (NII) media, particularly with a switched network environment. The DTV standard will be the broadcast part of the NII. The TV receiver as we know it today will change. Broadcasters have the potential to keep those changes to their advantage by sending a clear message to the hardware manufacturers: broadcasters must have a significant impact on the way TV pictures are viewed through the new digital receivers.

Quick implementation

As with any new technology, the digital TV system needs to be fully implemented before all of its characteristics can be fully documented. The allotment/assignment table itself may not be absolutely finalized for years. Until the industry has gained experience in dealing with the system under different conditions, the system will never be fully characterized.

The FCC has a different agenda than that of the broadcasters, and spectrum reallocation is at the top of its list. Should there be significant delays, especially due to the broadcasters, portions of the spectrum will be made available for other uses, severely damaging the many broadcast interests who have already made major investments leading to DTV. But the timetable must be realistic. ■

Louis Libin is director of technology for NBC, New York.

SATELLITE NEWS GATHERING SYSTEMS



S-2D Fly-away DSNG. Pack your bags and get out of town fast.

Your next hot news story can occur anywhere, at any time, so you've got to be ready to fly into action on a moment's notice. That's why, when leading broadcasters want a competitive edge for their state-of-the-art, all-digital news facilities, they select the Harris S-2D.

An S-2D Fly-away DSNG Uplink System contains everything you need for operation on Ku-, C-band or both, including satellite monitor and control, and audio/video program switching and monitoring systems. The lightweight high-performance carbon fiber antenna is segmented

for easy packing and travel, but sets up on site in only a few minutes.

S-2D instrument cases can be stacked quickly to provide studio-like control capabilities, and the MPEG-2, DVB interoperable Harris DSE1400 Digital Satellite Television Exciter provides money-saving broadcast effi-

ciencies which make the S-2D the most economical fly-away choice of all.

Over 500 years of Harris team experience in design and integration means that your Harris Fly-away DSNG System can be anything you want it to be, as you take it anywhere you want to go...



over and over again.

Harris offers the broadest selection of electronic equipment, backed by the industry's finest warranty and 24-hour service, worldwide.

To find out how you can do more on the fly, for less, and beat your competition all over the world, contact Harris.

HARRIS CORPORATION BROADCAST DIVISION

7920 Kentucky Drive
Florence, KY 41042 USA
TEL: +1 606 282-4800
FAX: +1 606 283-2818



A new world of broadcast solutions

Systems: Electronic News Gathering — Fly-away Satellite — Mobile Production — Radio Studio — Satellite News Gathering — Satellite Uplink
Television Production — Television Transmission

Circle (34) on Free Info Card

www.americanradiohistory.com

©1997 Harris Corporation

YOUR GUIDE TO NAB

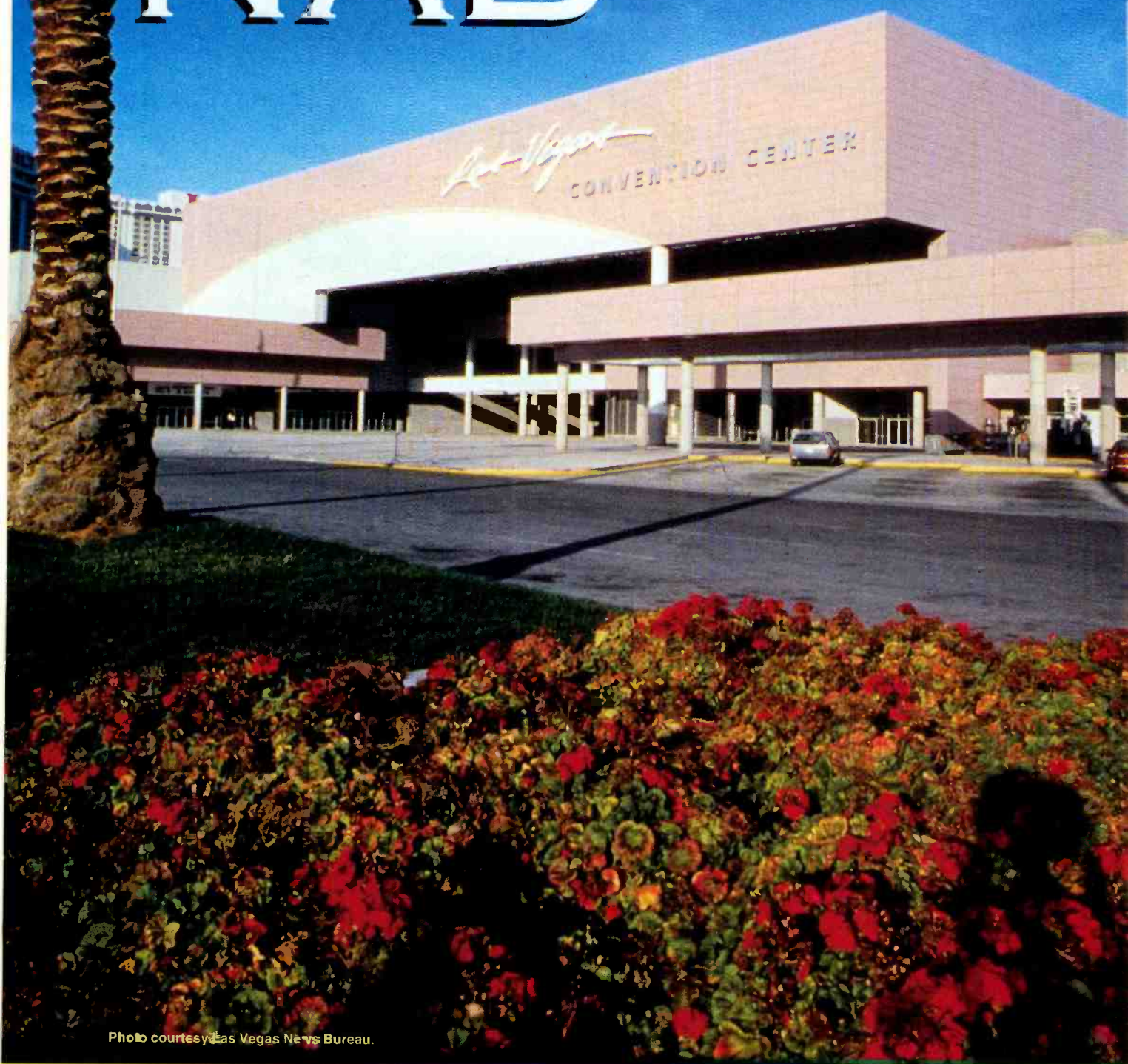
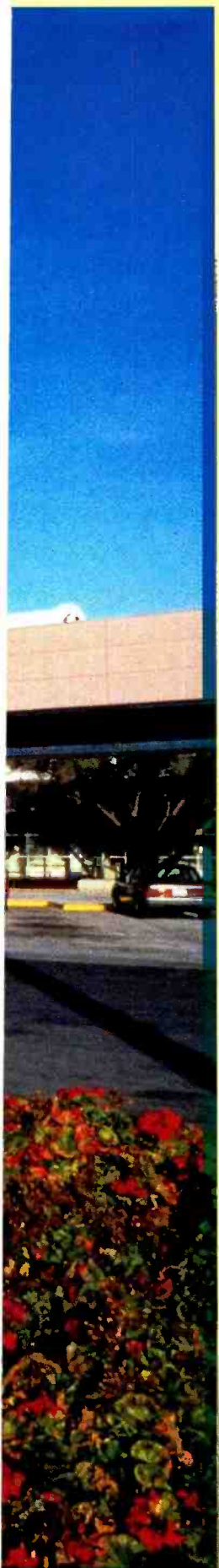


Photo courtesy Las Vegas News Bureau.



Okay, so you've got your airplane tickets. You've got a hotel room. Maybe you've even been given some advance money. You're all set for NAB.

Whoa, wait a minute. You've forgotten something.

Remember the often-repeated phrase from Carl Malden? He is still remembered for telling TV viewers, "Don't leave home without it." He, of course, was talking about the American Express card.

Well, I'm here to tell you that you don't need the American Express card to successfully navigate the NAB show. However, what you do need is this issue of *Broadcast Engineering* magazine. In fact, there's so much new stuff here, we ought to change the name of this issue from *Broadcast Engineering* to *Your guide to NAB*.

What's inside? I'm glad you asked.

First, the main technical sessions are summarized in convenient tables. At a glance, you'll know when and where the important sessions are scheduled. Whether your goal is to learn more about converting to DTV (I'll be there) or to get the real story behind Fibre Channel, the session tables will help.

Second, we've added a completely new feature to this issue: *EXTRA: Sneak Peeks*. The *EXTRA: Sneak Peeks* comprises 49 pages of advance peeks at the hottest new products to be shown at NAB. Now, you'll be able to see what's new even before you get to the show. Once you're there, you can see these exhibitors first, getting your own hands-on look at these new introductions before the crowds converge.

The *EXTRA: Sneak Peek* even offers you the chance to win prizes. In the spirit of gaming, we've even developed our own crossword puzzle, the *Word Wiz*. Beginning on p. 172, the *Word Wiz* is a fun exercise in memory recall. The answers to *Word Wiz* are contained in the *NAB EXTRA: Sneak Peeks*. So while you're reading up on the hottest new products to be shown at NAB 97, you'll also be finding the answers to the *Word Wiz*. Submit your completed puzzle and become eligible to win a T-shirt. Hey, the odds of winning here are probably better than at the slot machine — and it doesn't cost you anything to play.

Continuing our Guide to NAB, the third special (and exclusive) feature is the *BE FASTtrack*. *FASTtrack* shows you the shortest distance between booths in your hunt for the equipment and products you need.

We've grouped exhibitors in 41 product categories. The companies are then listed in numerical order, creating the shortest distance between the booths. Follow the path and you've just saved yourself hours — and long miles on the exhibit floor.

You can't navigate the show floor without a map and we've got it. This year, we've added a location grid, making it even easier to locate the booth you want to find. Find the company on the map's exhibitor list and you'll find the coordinates nearest to that booth. Check the coordinates against where you're at and you're almost there (where you want to be).

Finally, our exhaustive *Exhibitor Showcase* summarizes each exhibitor's product line and what they'll be showing in their booth. A quick search will show you which exhibitors have the technical solutions you need for your facility.

So, there you have it — everything you need to help make your trip to NAB successful. Because the show is right around the corner, begin planning your Las Vegas trek now. See you there.

Conference tables	48,50
NAB Extra: Sneak Peeks	64
Exclusive BE FASTtrack	174
Exhibitor floor map	201
Exhibitor's Showcase	218

BROADCAST ENGINEERING CONFERENCE

	Sat. 4/5	Sun. 4/6	Mon. 4/7	Tues. 4/8	Wed. 4/9	Thur. 4/10
9:00		KEYNOTE	ALL-INDUSTRY OPENING AND KEYNOTE ADDRESS		TV TECHNICAL/ REGULATORY ISSUES	PROFESSIONAL DEVELOPMENT WORKSHOP FOR ENGINEERS AND TECHNICIANS
10:00	TV TECHNOLOGY TUTORIAL: Part 1	DIGITAL TV: Studio and production issues	ENG/SNG: Digital quality in the field	DESIGNING TV FACILITIES: Part 1	THE SWITCH TO DTV: Making it work	THE MARRIAGE OF PC AND TV: A look at the future
11:00		DIGITAL SOUND BROADCASTING: Testing and regulatory issues	AUDIO PROCESSING: Competing with digital services			
12:00			EXHIBITION	EXHIBITION	TECHNOLOGY LUNCHEON	
12:30						
1:00						
1:30						
2:00	TV TECHNOLOGY TUTORIAL: Part 2	DIGITAL TV: Signal and transmission issues	BROADCAST TOWERS: Maximizing your vertical real estate	DESIGNING TV FACILITIES: Part 2	EMERGENCY PLANNING: Staying on the air	EXHIBITION
3:00		DIGITAL SOUND BROADCASTING: Implementing new technology	HYBRID STORAGE TECHNOLOGIES: Downloading the megabytes		TV/RADIO TECHNICAL REGULATORY ISSUES	
4:00						
5:00	EXHIBITION	EXHIBITION	EXHIBITION	EXHIBITION	EXHIBITION	

INTERNET BUSINESS CONFERENCE

	Sat. 4/5	Sun. 4/6	Mon. 4/7	Tues. 4/8	Wed. 4/9	Thur. 4/10
9:00			ALL-INDUSTRY OPENING AND KEYNOTE ADDRESS	MULTIMEDIA WORLD KEYNOTE ADDRESS		USING THE WEB TO INCREASE RATINGS
10:00				WEBBIZINESS: Investments/ partnerships/ alliances	VBML: 3D moving worlds BRANDING IN CYBERSPACE: Success stories on the Internet	
11:00						
12:00						
1:00	INTERNET SITE DESIGN: Do it your- self or send it out	HOT PRODUCTS: The add-on showcase		WEBCASTING: Is it ready for prime time?	DESIGNING WEB SITES THAT SELL	
2:00		ENHANCING YOUR BUSINESS WITH INTRANETS		THE DANGERS OF INTERNET COMMERCE	THERE'S MORE TO A WEBSITE THAN MEETS THE EYE	
3:00						
4:00	GREAT EXPECTATIONS: A reality check	COOL SITES ON THE WEB LEVERAGE YOUR CORPORATE DATABASE: Integrate it with the Internet	TRENDS IN INTERNET TECHNOLOGY	ENTERTAINMENT PROGRAMMING ON THE WEB	THE DESIGNER'S TOOLBOX	
5:00			6:00 MULTIMEDIA WORLD RECEPTION	CONDUCTING MARKET RESEARCH ON THE WEB	CHANNELING TRAFFIC TO YOUR WEBSITE	

You can turn to many different companies to equip your new digital studio. Luckily, you don't have to.



The new Tektronix 764's Session Statistics Display records key digital audio parameters, while the WFM601i provides extended error checking, eye pattern testing, and a traditional analog display for serial digital video.

The SPG 422 Component Digital Sync Pulse Generator is fast becoming the new industry standard, providing master digital timing references plus serial digital video and AES digital audio test signal sources.



You can shop a long list of suppliers for bits and pieces of test equipment for your new component digital studio. Fortunately, that's an ordeal you can avoid.

Tektronix is the one place you can turn for all the test equipment to equip your entire high-end digital studio. Plus all the expertise and assistance you need to ensure that your move to digital is fast and efficient.

Tektronix offers the industry's most advanced instruments to monitor and analyze everything, including

content, data integrity and transport layer. And to perform every essential studio function, from monitoring channel status data and accumulating session statistics during digital audio mastering, to testing the integrity of a 270 Mb/s digital video transport layer.

Why deal with a multitude of suppliers when you can turn to Tektronix, the video industry leader for more than 40 years.

For information on any of our communications test solutions, just call 800-426-2200. (When prompted, press "3" and ask for program 464.) Or, find us on the Web at <http://www.tek.com/mbd/w464>

TESTING THE CHANGING WORLD OF COMMUNICATIONS

Tektronix

UPLINK '97: INTERNATIONAL SATELLITE CONFERENCE

	Mon. 4/7	Tues. 4/8
8:00		BREAKFAST RECEPTION (LVCC)
9:00	ALL-INDUSTRY OPENING AND KEYNOTE ADDRESS	MEDIA SATS FOR THE NEW MILLENNIUM (LVCC)
10:00		(break) Meet the panel (LVCC)
11:00		EMERGING SATELLITE TECHNOLOGIES & THEIR IMPACT ON THE TELECOMMUNICATIONS BUSINESS (LVCC)
12:00		NAB COMMUNICATIONS & CONNECTIVITY '97 JOINT LUNCHEON (LVCC)
1:00		
2:00	GLOBAL INDUSTRY SATELLITE LEADERS: Views of the 21st century (Sands)	DIRECT-TO-HOME TV AROUND THE WORLD (LVCC)
3:00	(break) Meet the panel (Sands)	(break) Meet the panel (LVCC)
4:00	SATELLITES FOR PEOPLE ON THE MOVE (Sands)	SATELLITES IN THE TELECOMMUNICATIONS REVOLUTION (LVCC)
5:00	NAB Communications & Connectivity '97 Joint opening reception - SAT pavilion (Sands)	NAB COMMUNICATIONS & CONNECTIVITY '97 JOINT RECEPTION (LVCC)

ELECTRONIC DISTRIBUTION CONFERENCE

	Mon. 4/7	Tues. 4/8	Wed. 4/9
9:00	ALL-INDUSTRY OPENING AND KEYNOTE ADDRESS	BROADBAND DELIVERY OPTIONS (Sands)	WIRELESS INTERNET ACCESS: Where Is It? (Sands)
10:00		WIRELESS SERVICES FOR BUSINESS (Sands)	(break) Meet the panel (Sands)
11:00			PORTABLE CONNECTIVITY: DISTRIBUTING BROADCAST QUALITY AUDIO & VIDEO (Sands)
12:00		NAB Communications & Connectivity '97 Joint luncheon (LVCC)	
1:00			CELLULAR & PCS DATA APPLICATIONS (Sands) COPPER VS. FIBER (Sands) FIBRE CHANNEL SEMINAR (Sands)
2:00	OPENING SESSION: Moving toward a wireless Society	DIRECT-TO-HOME TV AROUND THE WORLD (LVCC)	(break) Meet the panel (Sands)
3:00	(break) Meet the panel (Sands)	(break) Meet the panel (LVCC)	ELECTRONIC PRODUCT DELIVERY SOLUTIONS (Sands) THE FIBRE CHANNEL SEMINAR (Sands)
4:00	SATELLITES FOR PEOPLE ON THE MOVE (Sands)	WIRELESS AND BROADCASTING: Where are the synergies? What are the differences? (LVCC)	
5:00	NAB Communications & Connectivity '97 Joint opening reception (Sands)	NAB Communications & Connectivity '97 Joint opening reception (LVCC)	NAB Communications & Connectivity '97 Joint opening reception



Good thing the fiber optic system is from Telecast.

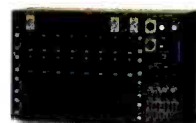


We design and manufacture fully-engineered fiber optic broadcast systems for the television and entertainment industries.

Our family of fiber "snakes" simplify your cabling and reduce labor and weight by 98%. They span up to 10 times farther than copper cables and eliminate interference and grounding problems. That's why Telecast systems bring you the most demanding worldwide events, like World Cup Championship

Skiing, two X-Games, three Super Bowls, golf and the Olympics, two Daytona 500's, and news coverage from the mundane to the historic.

Our Cobra™ is a triax extension cord for Sony®, Ikegami®, Philips® and other cameras, and reaches over 50,000 feet on durable, lightweight TAC fiber cables.



For your critical first mile, the only choice is Telecast.

For more information, contact us at
102 Grove St., Worcester, MA 01605, USA

508-754-4858, Fax 508-752-1520

Email: fiberac@telecast-fiber.com

Web site: <http://www.telecast-fiber.com>

NAB LVCC Booth #9281
NSCA Booth #624

Telecast
Fiber Systems, Inc.

**In the professional
MiniDisc market,
there are the haves.
And the have-mores.**



Allow us to state the obvious. The new MDS-B5 Digital Pro MiniDisc Recorder/Player has more high-end features than any other MiniDisc cart available today. And they all come standard, not as costly options. The MDS-B5 is the smart choice for radio, television, theater, and other applications requiring professional sound quality.

Its flexibility and easy operation make it ideal for sound effects, commercial messages and station promos. And high speed disc cloning is perfect for program distribution or safety back-ups. To learn more, call 1-800-635-SONY, ext. MDS. And remember, the MDS-B5 doesn't just have what you need. It has more.

THE MDS-B5 DIGITAL PRO MINIDISC RECORDER/PLAYER



© 1997 Sony Electronics Inc. Reproduction in whole or in part without written permission is prohibited. All rights reserved. Sony is a trademark of Sony.

SONY

Leader Bridges the Digital/Analog Gap!



Model LV-5103D

ANALOG

DIGITAL

Combination Waveform Monitor/Vectorscope for Analog & Digital Component Video Testing

This micro-processor controlled, multifunctional instrument is ideal for use with mixed digital and analog component video systems. Two serial inputs facilitate digital monitoring while a 3-wire input covers analog. Stereo analog audio monitoring is included. Key features are:

- 525 and 625 line compatibility for added flexibility.
- Waveform monitoring, digital and analog simplifies testing.
- Waveform display includes overlay parade and timing with full line selection.
- Component vector display mode facilitates color space testing.
- Unsurpassed digital video testing abilities.
- User selected alarms facilitate automated warnings of signal failure.
- Monochrome picture display for quick program identification.
- Detailed digital video signal analysis.
- Stereo-audio monitoring with electronic straticule.
- Cursors facilitate easy, error-free waveform readings.



User Selected Alarms



FEX Data Readout



Multi-System Menu

Call toll-free 1 800 645-5104

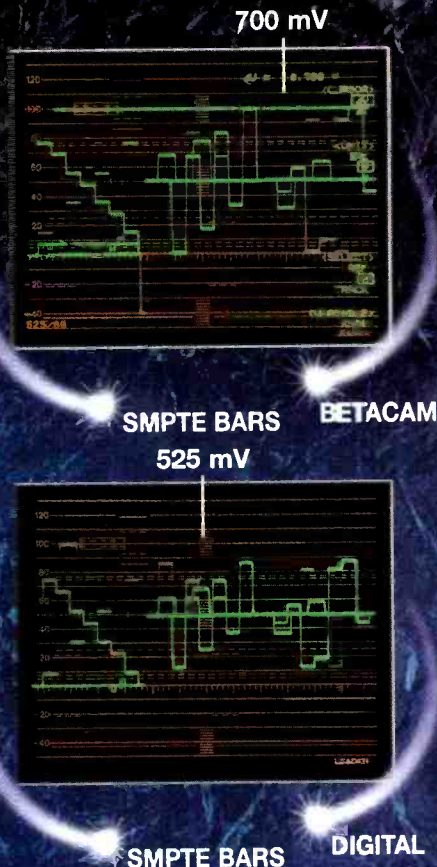
See us at NAB
Booth #8760

LEADER

FOR PROFESSIONALS WHO KNOW
THE DIFFERENCE

Leader Instruments Corporation, 330 Oser Avenue, Hauppauge, New York 11788
Regional Offices: Chicago, Dallas, Los Angeles, Atlanta. In Canada call Omnitronix Ltd., 903 828-5221

Watch Your "Analog-to-Digital" Chroma Levels!



The Leader LV 5100D Solves Your Video Conversion Problems



"It's happening!" The transition from analog to digital components brings with it startling changes in the way signals are monitored. Some examples:

- Chroma signals for 75% color bars used as the standard signal with analog Betacam occupy 100 IRE (700 mV).
- Chroma signals for 75% color bars in digital components span 75 IRE (525 mV). The reference standard in digital is 100% color bars, with waveform monitor scales set up to gauge them.
- Much digital program material is and will be transcoded from both analog-component and composite sources where 75% (SMPTE) bars are the reference standard.
- Setup does not appear in digital standards but is everyone playing by the same rules?

No wonder there's been plenty of confusion and rejected material because chroma has been set too hot! Familiar level settings made in analog can create disaster, carried over to the digital domain. But, Leader's LV 5100D, a monitoring unit that functions both in composite as well as in analog and digital component environments permits the end user to check levels in any format. For information on the LV 5100D and keen insight into the subject of level settings, call our technical marketing staff, toll free at 1 (800) 645-5104 or return the Leader reply card in this magazine.

LEADER
FOR PROFESSIONALS WHO KNOW
THE DIFFERENCE

Visit us at the
NAB Show – Booth 8760
Las Vegas Convention Center

Circle (23) for Product Information Only
Circle (24) for Product Information & Demonstration

www.americanradiohistory.com

TRADE UP TO THE LEADER



Special "NAB" Trade-Up Offer



LEADER
Test Gear

See BCS At
Booth #8666
Las Vegas Convention Center

SAVE UP TO \$1000

- Trade in your existing analog waveforms and vectorscopes.
- Trade in your signal generators and other test equipment towards the purchase of new Leader gear.
- Get an on-the-spot appraisal, subject to equipment inspection.
- Financing available for balance with same day approval.

"Bridge the Gap"
with Leader and BCS



1840 Flower St., Glendale, CA 91201 818-551-5858
500 W. 37th St., New York, NY 10001 212-268-8800
www.broadcaststore.com

TV MANAGEMENT & MARKETING CONFERENCE

	Sun. 4/6	Mon. 4/7	Tues. 4/8	Wed. 4/9
9:00		ALL-INDUSTRY OPENING AND KEYNOTE ADDRESS		THE SWITCH TO DTV: MAKING IT WORK (8:30-12:00) L/C/C
10:00		NAB TV MEMBERSHIP MEETING TVB WORKSHOP	TV BUREAU OF ADVERTISING ANNUAL MKTG. CONF.	
11:00			TVB STATE OF THE INDUSTRY ADDRESS	
12:00				
12:30				
1:00		NAB TV/TVB JOINT LUNCHEON & NAB HALL OF FAME PRESENTATION	THE ADVERTISER & TELEVISION	THE WAYS & MEANS OF CHILDREN'S TELEVISION
1:30			TVB EXHIBIT HALL WALK AROUND LUNCH (12:30-2:30)	
2:00	TVB BROADCAST SALES EXHIBIT (LVH) (1:30-5:00)	JOINT NAB TV/TVB PRESENTATION		
3:00	SATELLITE SUMMIT (2:00-4:30)		TVB EXHIBIT HALL GET-TOGETHER	
4:00		NAB TV & TVB WELCOMING RECEPTION		
5:00				

BE DIGITAL READY @ **NUCOMM**^{INC}.COM



DIGALOG RADIO

**Digital-Analog Heterodyne
Microwave Systems**

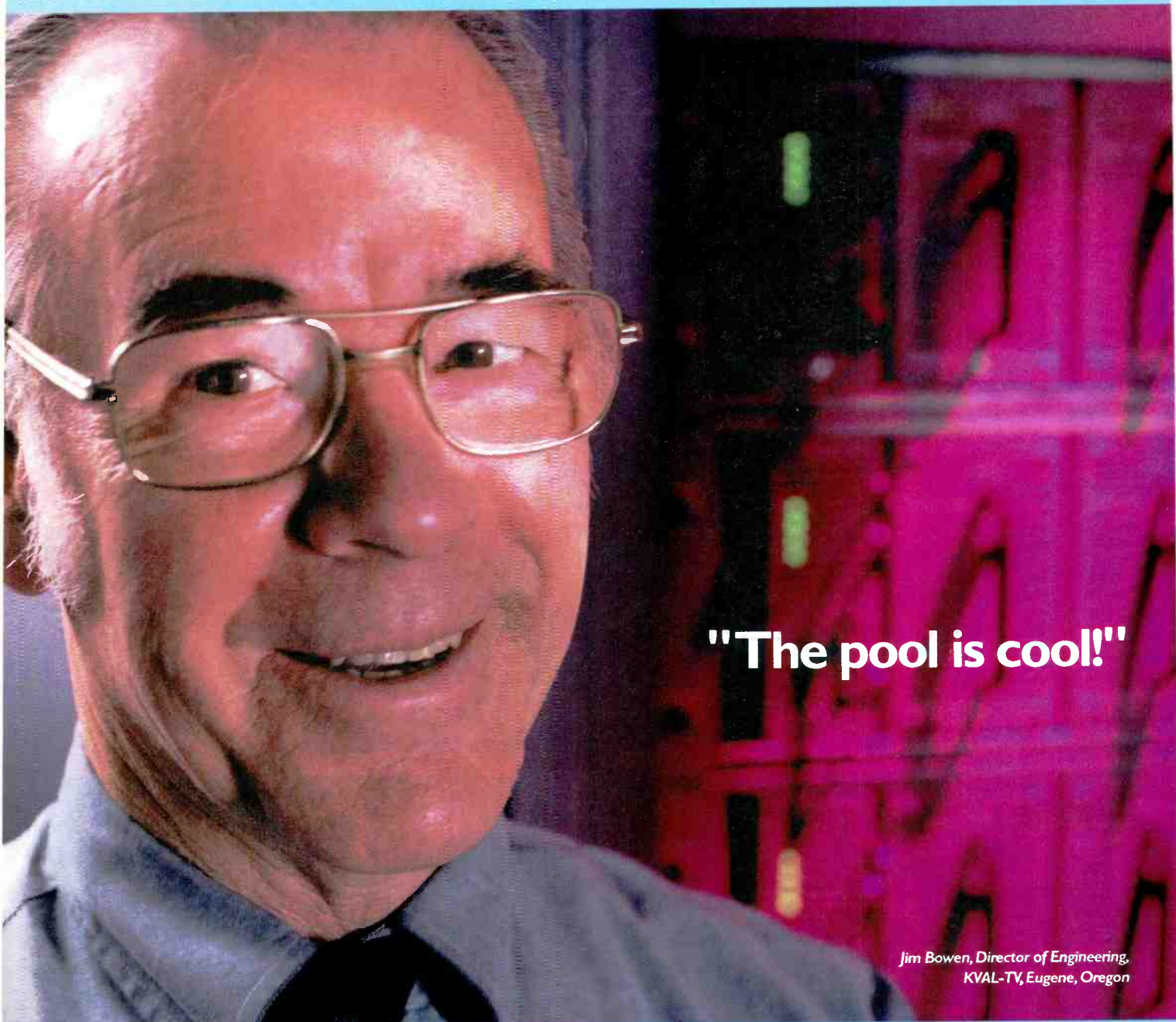
- Accepts compressed Digital Signals
- 45 Megabit QPSK, 16QAM, 4 Level FSK
- 2-16 GHz In Band
- STL Simplex/Duplex
- 2 RU, 6 Audio Sub Carriers
- 24 hour Customer Service

NUCOMM^{INC}
MICROWAVE COMMUNICATION PRODUCTS

Hackettstown, NJ 07840
(908) 852-3700
www.nucomm.com

Circle (25) on Free Info Card

See us at NAB Booth #8654



"The pool is cool!"

*Jim Bowen, Director of Engineering,
KVAL-TV, Eugene, Oregon*

"The Philips BTS Media Pool video server is our gateway into the future requirements of DTV, providing a single source for centralized programming to KVAL-TV and our affiliate stations, KPIC-TV and KCBY-TV.

In researching the video servers currently available, cost effectiveness, versatility of configuration and the preservation of CCIR601 standards were at the top of our list of critical requirements. The Media Pool's ability to meet those requirements, together with the Philips BTS reputation for unparalleled customer support, made the Media Pool our best possible choice.

Today we program our stations with confidence, utilizing Philips DISKCART™ and STREAM™ software and trusting in the quality and reliability of the Media Pool to provide the programming directly.



The Media Pool is definitely a cool tool."

Come and see the Media Pool in action at NAB, Philips booth 9901; or for more information visit us at www.philipsbts.com or call 1-800-962-4287.

Circle (26) on Free Info Card

Let's make things better.



PHILIPS

BROADCASTERS' LAW & REGULATION CONFERENCE

	Mon. 4/7	Tues. 4/8	Wed. 4/9
8:00		7:30 - 8:45 FCC CHAIRMAN'S BREAKFAST	
9:00	ALL-INDUSTRY OPENING AND KEYNOTE ADDRESS	FCC EQUAL EMPLOYMENT OPPORTUNITY OBLIGATIONS	
10:00	DUPLICATIONS, LMAs & OWNERSHIP CHANGES DON'T LET A LIBEL OR PRIVACY SUIT SAND BAG YOUR STATION'S BOTTOM LINE REPUTATION	EXHIBITION	AVOIDING FCC FINES: A commission rule enforcement primer
11:00			
12:00			
12:30	CONTESTS, LOTTERY AND CASINO ADS, PLUS STATION PROMOTIONS		
1:00		ANTITRUST PRIMER FOR BROADCASTERS HERE AND ABROAD: Adding a business integrated in broadcasting	
1:30		REGULATORY DIALOGUE LUNCHEON BREAK	
2:00	SMALL & MEDIUM MARKET STATION FINANCING	REGULATORY DIALOGUE	EXHIBITION
3:00			
4:00			
5:00	EXHIBITION		

BURLE Remains #1 Supplier for Broadcast Power Tubes.

BURLE has maintained the recognized standard of excellence within the Broadcast Power Tube industry. Although the name has changed, our quality has remained the same for over 50 years.

BURLE's proud tradition continues with the best warranty and customer service in the industry. In fact, our

dedication to customer support continues long after the warranty is over.

BURLE's Broadcast Power Tubes are the best investment you can make.

For more information, call us at 1-800-366-2875 or fax: 717-295-6096. Visit us on

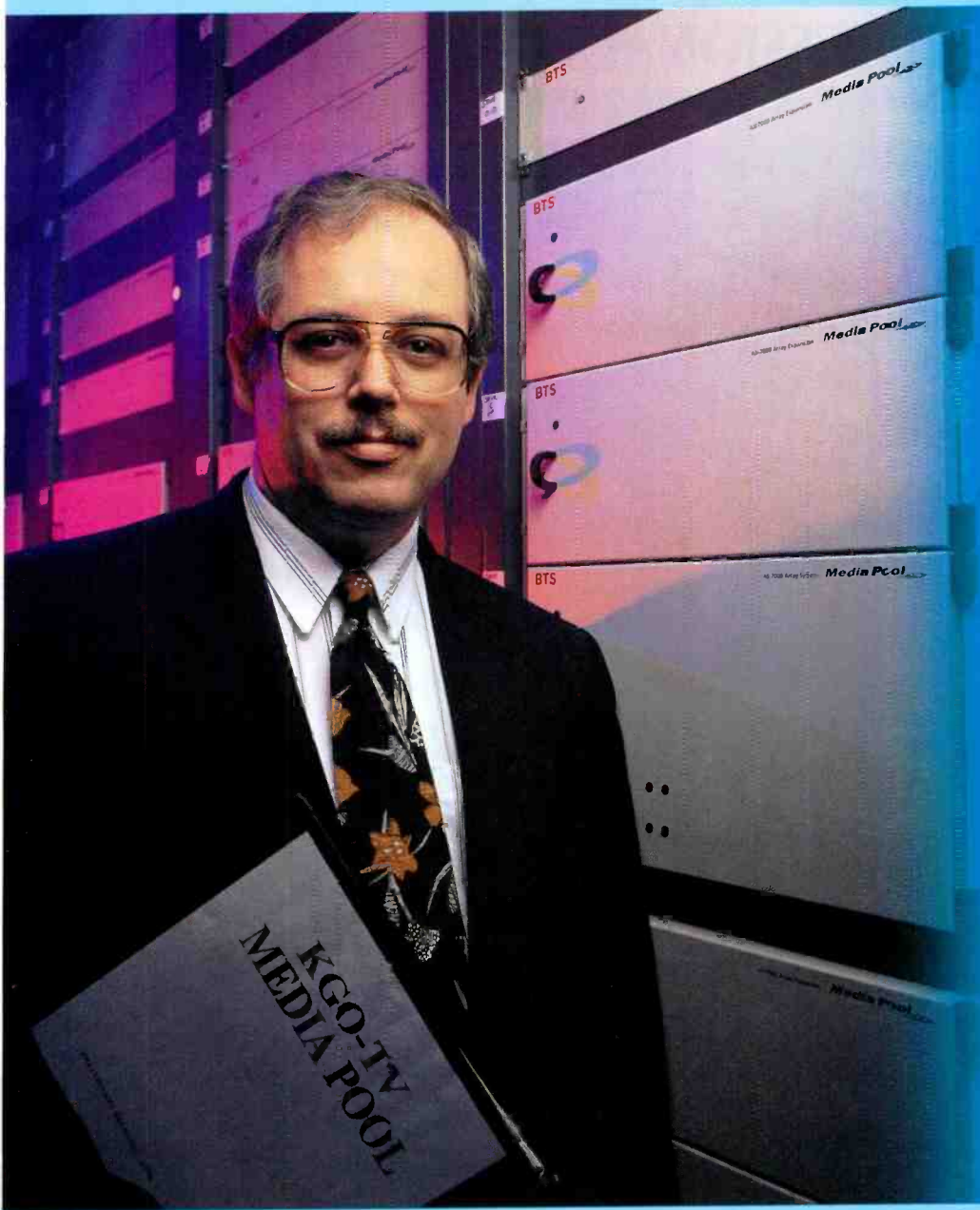
the Web at www.burle.com or email us at burles@success.net.



With Extended Warranty

BURLE

ELECTRON TUBES



**"The Media Pool
video server
system has
greatly improved
the efficiency of
our broadcast
facility."**

*Jim Casabella, Director of Engineering,
KGO-TV, San Francisco, California*

"With a 'tapeless environment' set as a goal for our broadcast facility, we outlined our requirements for a video server system that would not only satisfy our current needs, but also provide for the technologies of the future. At the top of our list was the need for a system with scalable bandwidth that offered modular storage capacity to support growth. In addition, we needed to work with a company that shared our vision of integrating a near-line tape storage unit such as the StorageTek MediaVault™ into the overall video server solution. Philips BTS met these requirements with the Media Pool

video server. We were also very comfortable with the company's long running reputation for training and service after the sale.

Installing the Media Pool video server system has greatly improved the efficiency of our broadcast facility by eliminating the

cumbersome task of sorting and loading endless amounts of tape. With the Media Pool, we achieved our current goal by using a video server that serves up a tapeless environment."

Come and see the Media Pool in action at NAB, Philips booth 9901; or for more information visit us at www.philipsbts.com or call 1-800-962-4287.

Circle (35) on Free Info Card



Let's make things better.



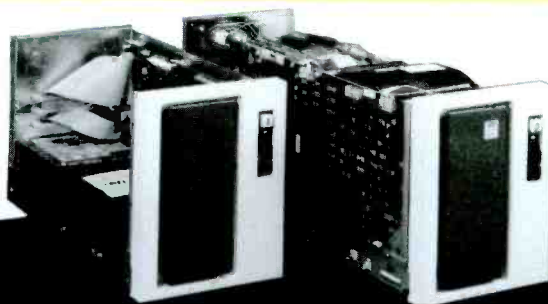
PHILIPS

NEW MEDIA PROFESSIONALS CONFERENCE

	Sat. 4/5	Sun. 4/6	Mon. 4/7	Tues. 4/8	Wed. 4/9	Thur. 4/10
9:00			ALL-INDUSTRY OPENING AND KEYNOTE ADDRESS	MULTIMEDIA WORLD KEYNOTE ADDRESS		THE SOCIAL FOCUS OF NEW MEDIA
10:00						
11:00				VIRTUAL REALITY Technologies and tools	MARKETING NEW MEDIA: Emerging global markets THE MYTH OF PUBLIC DOMAIN	
12:00						
12:30			EXHIBITION			
1:00	IMA MULTIMEDIA BOOT CAMP: Part 1	THE VIRTUAL COTTAGE PCs, TVs & THE SET-TOP BOX		HYBRID MEDIA: CD-ROM & Internet case studies NEW MEDIA FROM THE ANALYSTS' PERSPECTIVE	INTERACTIVE MEDIA WRITER'S WKSHP INTERACTIVE TV: The consumer's choice?	
1:30						
2:00						
3:00	IMA MULTIMEDIA BOOT CAMP: Part 2	DVD AUTHORIZING WKSHP CREATING INTERACTIVE AUDIO FOR MULTIMEDIA	DVD TECHNOLOGY UPDATE FOR DEVELOPERS INTERACTIVE SERVICES:	NON-LINEAR DIGITAL PRODUCTION (2:00) DEVELOPING TRAINING PROGRAMS WITH NEW MEDIA (3:30)	CREATING HOT ANIMATION & GRAPHICS FINANCING NEW MEDIA	
4:00						
5:00			MULTIMEDIA WORLD RECEPTION (6:00)			

Update Ampex ESS-3/5,
AVA, Harris Iris, Quantel, and
Dynatech Newstar system(s)

Replace old disk drives with
reliable 5¼" technology



reliable
easy replacement

obsolete
problem drive

* FREE TRIAL offer: Install our product,
test for 30 days, and if you're not completely satisfied,
return it for a full refund. Call or FAX for details...

- proven technology
already installed at many broadcast stations
- improved reliability
greater than 100,000 hours MTBF
- plug-compatible
NO software or controller changes required
- reduced maintenance
NO MORE painful repair bills

NO RISK*
guaranteed!

BTI COMPUTER SYSTEMS

840 Del Rey Avenue, Sunnyvale CA 94086 (408) 733-1122

(800) 628-5147

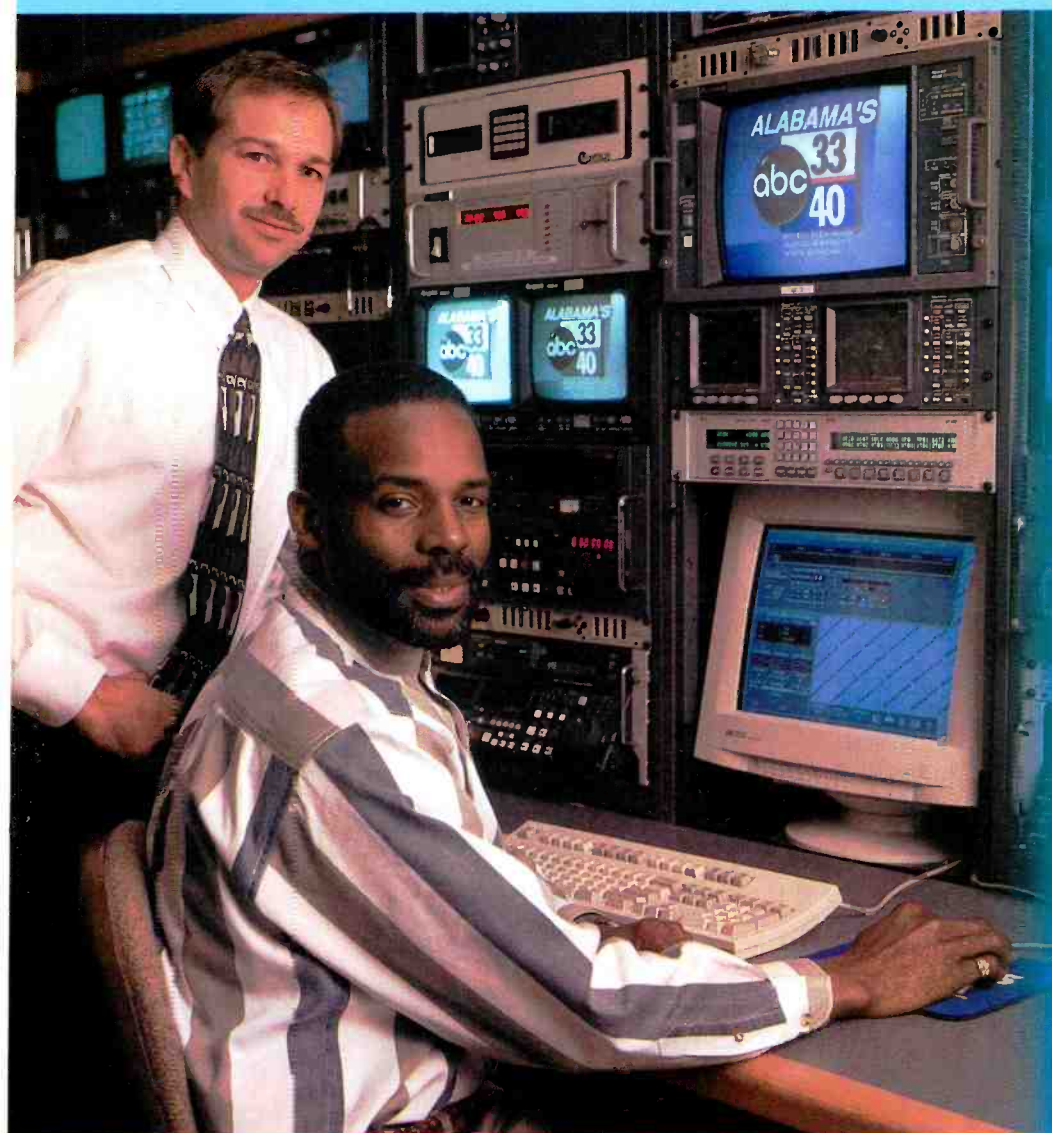
FAX: (408) 736-8410

Europe:

BTI Computer Systems (UK) Ltd. Pitmaston, Moor Green Ln
Moseley, Birmingham England B13 8NF

Ph: 44 121 449-8000 FAX: 44 121 449-9598

Circle (36) on Free Info Card



"The Media Pool has increased our revenue stream."

*Gary Watkins,
Director of Facilities, (standing)*

*Ronald Thomas,
Engineering Supervisor,
TV Alabama, Birmingham, Alabama*

"Our search for a server to operate as a multi-channel distribution device for programming and commercials quickly led us to Philips BTS. Confidence gained through years of experience using Philips BTS equipment, together with their solid reputation for service and support after the sale, immediately made the Media Pool video server a strong contender.

We were most impressed with the Media Pool's ability to operate in both analog and digital environments, providing for a smoother transition to digital technology. Coupled with its ease of operation in the master control booth and impressively high quality video from compressed data, the Media Pool video server became our top choice.

As with any new technology, introducing this new system to our engineering and production staffs was a major concern. The highly skilled support staff

provided by Philips BTS gave us the expert training needed to operate the Media Pool in the most efficient manner possible.

Our goal to streamline our operations into a tapeless environment was quickly met. Multi-channel distribution of

programming and commercial spots

Circle (37) on Free Info Card

has enabled us to regionalize broadcasts with both specific programming and specific advertising targeted to more regionalized demographics. The Media Pool provided the means to localize programs and spots for all of our stations from a centralized site. The Media Pool has increased our revenue stream."

— Gary Watkins, Director of Facilities

Come and see the Media Pool in action at NAB, Philips booth 9901; or for more information visit us at www.philipsbts.com or call 1-800-962-4287.



Let's make things better.



PHILIPS

BEA ANNUAL CONVENTION

	Fri. 4/4	Sat. 4/5	Sun. 4/6
8:00	REGISTRATION OPEN (9:00-5:00)	REGISTRATION OPEN (8:00-5:00)	REGISTRATION OPEN (8:00-10:00)
9:00	OPENING BREAKFAST (9:15-10:15)	NAPTE-SPONSORED PLENARY SESSION (8:00-9:15)	NAPTE-SPONSORED PLENARY SESSION (8:00-9:15)
10:00	BEA EXHIBITION OPEN	BEA EXHIBITION OPEN	BEA CAREER FAIR PEB PLACEMENT CENTER OPEN (8:00-12:00)
11:00		BEA PLACEMENT CENTER OPEN (9:00-5:00)	
12:00			
12:30			
1:00			BEA CAREER FAIR BEA LUNCHEON: Keynote speaker - Larry King
1:30			
2:00	BEA EXHIBITION OPEN	BEA EXHIBITION OPEN	
3:00			DISTRICT MEETINGS
4:00			
5:00			
6:00	BEA OPENING COCKTAIL RECEPTION		

HOTRONIC AT81 10 BIT FRAME SYNCHRONIZER

Partial users: KTXL, KPIX, KCRA, WCIX, WNOL, KOPT, WMSN, KTVU, KTTV, KTLN, KTVB, KTVZ, KTVH, KTVI, KTVL, KTVN, KTVB, KTVZ, KTVH, KTVI, KTVL, KTVN

- 10 Bit Video Processing
- 20 Bit Stereo Audio Delay
- Guarantee No Lip Sync Problem
- 20 dB Audio Headroom
- Audio Off-Set
- All in One U Space

Price from \$2,400.00



- No Visible Quantization Noise
- Pass VIR/VIT
- Full Proc-Amp Control
- Freeze Field/Freeze Frame and MORE....

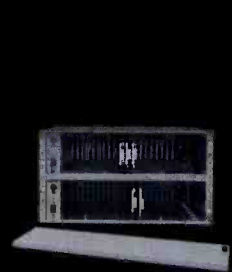
H HOTRONIC, INC.

1875 S. Winchester Blvd.
Campbell, CA 95008 (U. S. A.)
Tel: 408•378•3883 Fax: 408•378•3888

Circle (38) on Free Info Card

See us at NAB Booth #5500

Our Systems have earned their reputation for a very good reason...



Terminal Equipment



Jupiter Control Systems



Media Pool Digital Storage

Saturn Master Control



Venus Routing Systems

...each component is strong enough to stand out on its own.

Philips Broadcast Television Systems Company has become famous for producing innovative products, offering major advances in technology and providing a unique set of advantages for addressing today's complex operating challenges.

When you combine these products into a Philips BTS system solution, you are getting the most powerful system available--a fully integrated package with the features you need today and the flexibility to adapt to the changes that will come tomorrow.

Find out yourself why Broadcast, Cable Origination, and Satellite Programming facilities around the world have chosen Philips BTS for their on-air systems requirements.

For more information call us today at: **1-800-962-4287** or visit us at: **www.philipsbts.com**.

Let's make things better.

Philips
Broadcast Television
Systems Company



PHILIPS

Circle (39) on Free Info Card

www.americanradiohistory.com

© 1997 Philips Electronics North America Corporation



SNEAK PEEKS



Here they are; the hottest and newest products you'll find on the NAB show floor. Companies have released to *Broadcast Engineering* magazine information on these products in advance of the show so you can plan your early booth visits. Now, you'll know what's hot even before the show opens. Don't wait for the crowds to gather, hit these booths first and get your own private demonstration of what are sure to be some of the hottest and most innovative products at this year's show.



Tektronix is moving quickly to capture an even larger share of the server market. Complementing the popular Profile, Tektronix is adding the PDX208 disk expansion and PAC200 audio chassis. Using two PDX208s, a user gets almost 20 hours of storage. The PAC200 brings AES digital audio into the Profile for storage. If you're looking for networked storage, the PDR200 will also be shown in networked configurations using Fibre Channel topology. Need a library system? Check out the Profile PLS200, a robotic, digital datatape library providing 1.6TB of storage. Up to 100 hours of storage is provided in only 12RU of space.

Leveraging the name and expertise of Grass Valley, Tektronix will show the interesting M-2100 master control system. No longer simply called a "switcher," this product brings a high degree of integration and ease of operation to automated and multichannel operations. Multiple M-2100 solutions can be tied together to route, generate effects and control multiple program channels, all from a single point of operation. The M-2100 panels can be integrated with the Profile for a tight, easy-to-use clip storage system, along with audio if desired.

Seeing the burgeoning need for systems integration, Tektronix will feature in its booth information about its Professional Services Division. Leveraging on the integration of its several divisions over the last two years, Tektronix will now offer customers design and installation of a wide range of products and services.

**Tektronix, P.O. Box 500, Beaverton, OR 97077;
800-547-8349; fax 503-222-1542; www.tek.com**

Circle (1200) on Free Info Card

Hewlett-Packard arrived at the video storage party only about three years ago. However, in that short time, the company has proved to have developed a successful product as evidenced by the many sales to some of the largest multichannel satellite and cable programmers.

This year, H-P will be highlighting its new H-P MediaStream disc recorder. The VDR provides up to five channels and nine hours of RAID-protected storage. The new VDR is designed for use as a stand-alone disk recorder or in conjunction with the H-P MediaStream Broadcast Server.

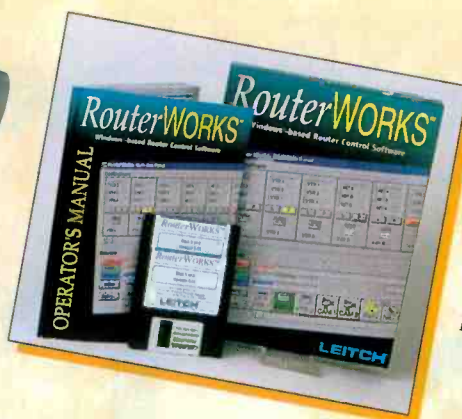
One of the advantages of the H-P recorder is its small footprint. In about the same space as a Beta-SP deck, the user can get a 1x3, five-hour, RAID-protected system. According to company officials, competing RAID-based products in a similar configuration are nearly triple the size and on average, sell for more than \$120,000. The H-P 1x3, five-hour system has a base price of \$85,000.

**Hewlett-Packard, Test & Measurement, P.O. Box 50637, Palo Alto, 95303; 800-367-4788;
fax 408-553-3905; www.hp.com/info/forhptv/; forhptv@vid.hp.com**

Circle (1201) on Free Info Card



**SNEAK
PEEKS**



Leitch is offering a new and improved version of the routing system control software, RouterWORKS. The Windows-based program offers an intuitive, easy-to-use set of applications for configuring, monitoring and controlling a routing system. Featuring an improved matrix view of router status, version three allows preset/take operations and offers support for locks and protects. It also provides salvo editing and launching, incorporates a touchscreen interface and includes password protection. The upgrade is available free to all existing RouterWORKS customers.

Leitch, 920 Corporate Ln., Chesapeake, VA
23320; 800-231-9673; fax 757-548-4088;
www.leitch.com

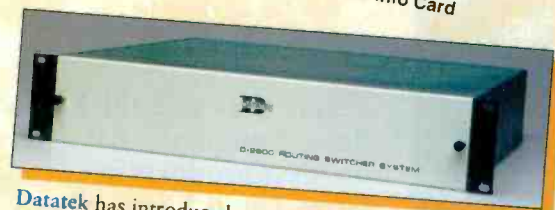
Circle (1202) on Free Info Card



The DVA320QC digital video analyzer from AAVS provides you with the unique ability to test component and composite serial digital video signals in both 525- and 625-line formats with continuous, real-time on-line measurements of all key digital video parameters. It provides you with complete testing flexibility with user definable thresholds for quick and reliable good/bad testing capabilities, plus instant notification of error occurrences with an alarm function.

AAVS, 3200 Sencore Dr., Sioux Falls, SD 57107; 800-796-2287
or 605-339-0100; fax 605-335-6379

Circle (1203) on Free Info Card



Datatek has introduced several new products in its D-2600 product line of 32x32 routing switchers, including a 32x32 AES/EBU digital audio switcher for mounting in a 2RU rack frame. This switcher complements the 32x32 analog video, 32x32 two-channel analog audio and 32x32 digital video switcher introduced at NAB last year. Also new are the 64x16 digital video switcher, a 32-port data switcher, and a 16x4 digital video/digital audio switcher combined in a 1RU frame.

Datatek, 1121 Bristol Rd., Mountainside, NJ 07092;
800-232-6381 or 908-654-8100; fax 908-232-6381

Circle (1204) on Free Info Card



MPEG-2

Test and Measurement

Whatever your requirements for real time MPEG-2 and DVB test and measurement, Digital Transport Systems has the hardware and software solution:

- Transport Stream Analyzer (TSA™)
- Transport Stream Generator (TSG™)
- Transport Stream Workstation (TSW™)

For powerful, cost-effective solutions, Digital Transport Systems is your single source. Call us today.

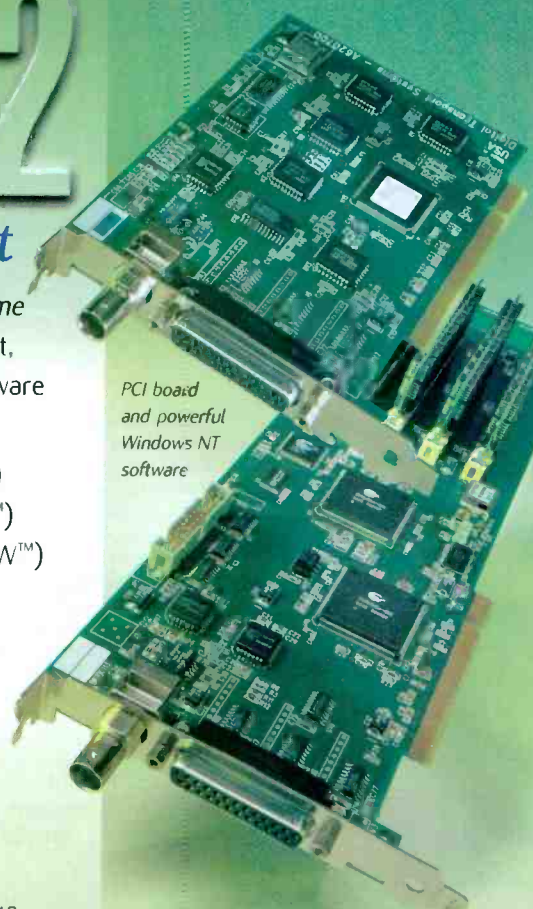
Circle (40) on Free Info Card



Digital Transport Systems

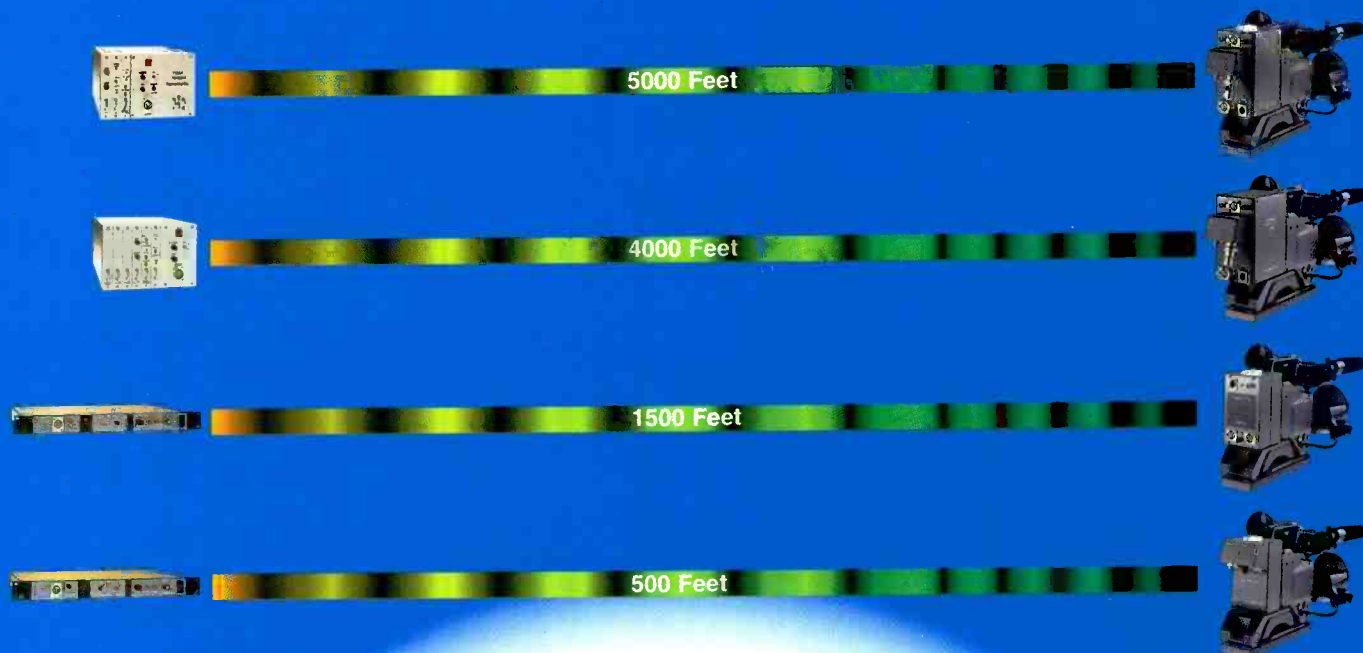
11545 West Bernardo Court, Suite 200
San Diego, CA 92127
phone: (619) 675-1410 fax: (619) 675-1412

www.americanradiohistory.com cerfnet.com/~dts



PCI board
and powerful
Windows NT
software

Telemetry Goes The Distance.



Several feet to several miles. It's the range of distance Telemetry delivers to turn your ENG cameras into full featured EFP cameras for the field and the studio. With direct docking camera adapters -- factory set-up ready to plug and play. And the compatibility to interface with virtually any video format including digital. It's the level of performance you would expect from the people who invented triax and coax camera control technologies.

For composite video, there's the Telemetry TM-9250 triax system. It maintains signal integrity over the longest cable runs (5000 feet*). And offers comprehensive camera set-up and adjustment capabilities, along with video, return video, microphone audio, intercom, tally, and genlock -- plus power. It's the industry standard for quality and performance. For component video, Telemetry's TM-9660 Triax System offers all the same functionality. With all the benefits of component video transmission to a distance of 4000 feet.

If you're working with coax, the Telemetry TM-9255A Coax System delivers cost-effective camera remote control capabilities at distances of 1500 feet. Plus power for the camera and a large studio viewfinder. Telemetry also offers the TM-9525 Dual Coax/Fiber System. This highly versatile system employs dual coax cables up to 500 feet and can be cost-effectively interfaced with 15MHz unidirectional fiber optic transceivers for long distance camera control without the use of repeaters.

Get more mileage from your ENG cameras. With Triax and Coax camera control systems from Telemetry. They go the distance. For more information call 201-848-9818, or fax 201-848-9819.

Telemetry Inc.

CAMERA CONTROL SYSTEMS

SEE US AT NAB BOOTH #11646

Telemetry Inc., 5 Leighton Place, Mahwah, NJ 07430, U.S.A.

Circle (28) on Free Info Card

*All distance specifications based on using standard Belden 9232 triax and 8281 coax cable.

The Good News: The US HDTV
The Not So Good News: Your

The Options:

Option 1

Convert your existing equipment
into non-existing equipment



The HD6000, with serial digital I/O and a data rate of 1.5Gbps, is one of a range of ten HDTV processors from Snell & Wilcox designed to provide a seamless transition between all conventional and high definition standards.

Standard has been agreed
existing equipment is incompatible

Option 2

Convert from 1125/60
with 1035 active lines and
1920 pixels to 1125/59.94
with 1080 active lines
and 1920 pixels (and vice
versa) using the HD6000
High Definition Processor.



For more information please contact us at:

USA Tel: +1 408 260 1000 Fax: +1 408 260 2800 **UK** Tel: +44 (0)181 607 9455 Fax: +44 (0) 181 607 9466

France Tel: +33 1 45 28 1000 Fax: +33 1 45 28 6452 **Germany** Tel: +49 611 99 08 40 Fax: +49 611 30 57 36

India Tel: +91 11 641 2609 / 622 8014 Fax: +91 11 621 8777 **Japan** Tel: +81 3 3446 3996 Fax: +81 3 5449 7392

Russia Tel: +7 095 248 3443 Fax: +7 095 248 1104 **Singapore** Tel: +65 332 5455 Fax: +65 332 5466



HDTV by  SNELL & WILCOX

Circle (29) on Free Info Card

www.americanradiohistory.com

SNEAK PEEKS



Frezzi Energy Systems is taking battery management into the 21st century with products like its M2100 battery management system. Using the latest high-performance RISC processor, the M2100 incorporates a fast charger, discharger, analyzer and power supply into one state-of-the-art unit. It can keep you up to date on the condition of your batteries at any time, and an Alpha Numeric LCD display provides complete diagnostics at a glance.

Frezzi, 5 Valley St., Hawthorne, NJ 07506-2084;
201-427-1160; fax 201-427-0934

Circle (1205) on Free Info Card



Another addition to the line of pedestal systems from Chapman/Leonard Studio Equipment is the LenCin. The triangular-shaped base features dramatically improved four-stage column rigidity and the column is interchangeable between the LenCin and its predecessor, the Pedolly. The LenCin features crab or conventional steering, virtually silent operation and a variety of offsets to accommodate many types of ground and floor conditions.

Chapman/Leonard, 12950
Raymer St., North

Hollywood, CA 91605;
888-883-6559; fax 888-502-5263

Circle (1206) on Free Info Card

Tektronix continues to provide industry leadership in the area of picture quality analysis. Using techniques developed in cooperation with the David Sarnoff Lab, techniques to measure picture quality using the Just-Noticeable Difference (JND) method will be demonstrated. Volume one of the Tektronix *JND Report*, a technology primer on JND, will be available in the booth.

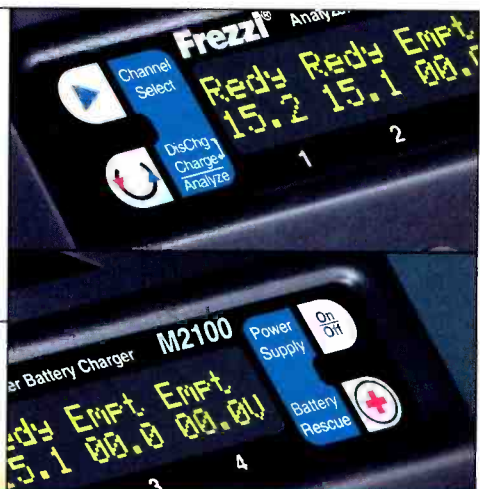
New on the test and measurement side is the WFM601A and WFM601E serial component monitors. Because CCIR-601 is quickly becoming the standard video signal format, these new monitors should be a big hit with show attendees. Useful in camera control and video graphics applications, the WFM601A will provide accurate monitoring component signal levels and timing on source and processing equipment. The WFM601E is designed for transmission applications.

Tektronix, P.O. Box 500, Beaverton, OR 97077;
800-547-8949; fax 503-222-1542; www.tek.com

Circle (1207) on Free Info Card



Frezzi Means Advanced Charging



Introducing the only battery charger you'll ever need, the Frezzi Energy M2100 Battery Management System. Designed like no other charger, the M2100 includes features not found in other chargers costing considerably more.

We put in a Discharge program that analyzes, providing Discharge and Charge capacity. There's also a unique Rescue program that will verify and safely trickle charge over discharged batteries. At Frezzi, we listen to our customers, and the result is a 70 Watt Power Supply built in the M2100 for powering a camcorder and Frezzi Light all in one unit.

With all these features, the Frezzi M2100 is the only Charger your production facility will ever need.

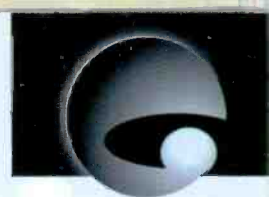
Frezzi
ENERGY SYSTEMS

5 Valley Street, Hawthorne NJ 07506
 Tel: 201-427-1160 Fax: 201-427-0934 <http://www.frezzi.com>

Circle (30) on Free Info Card

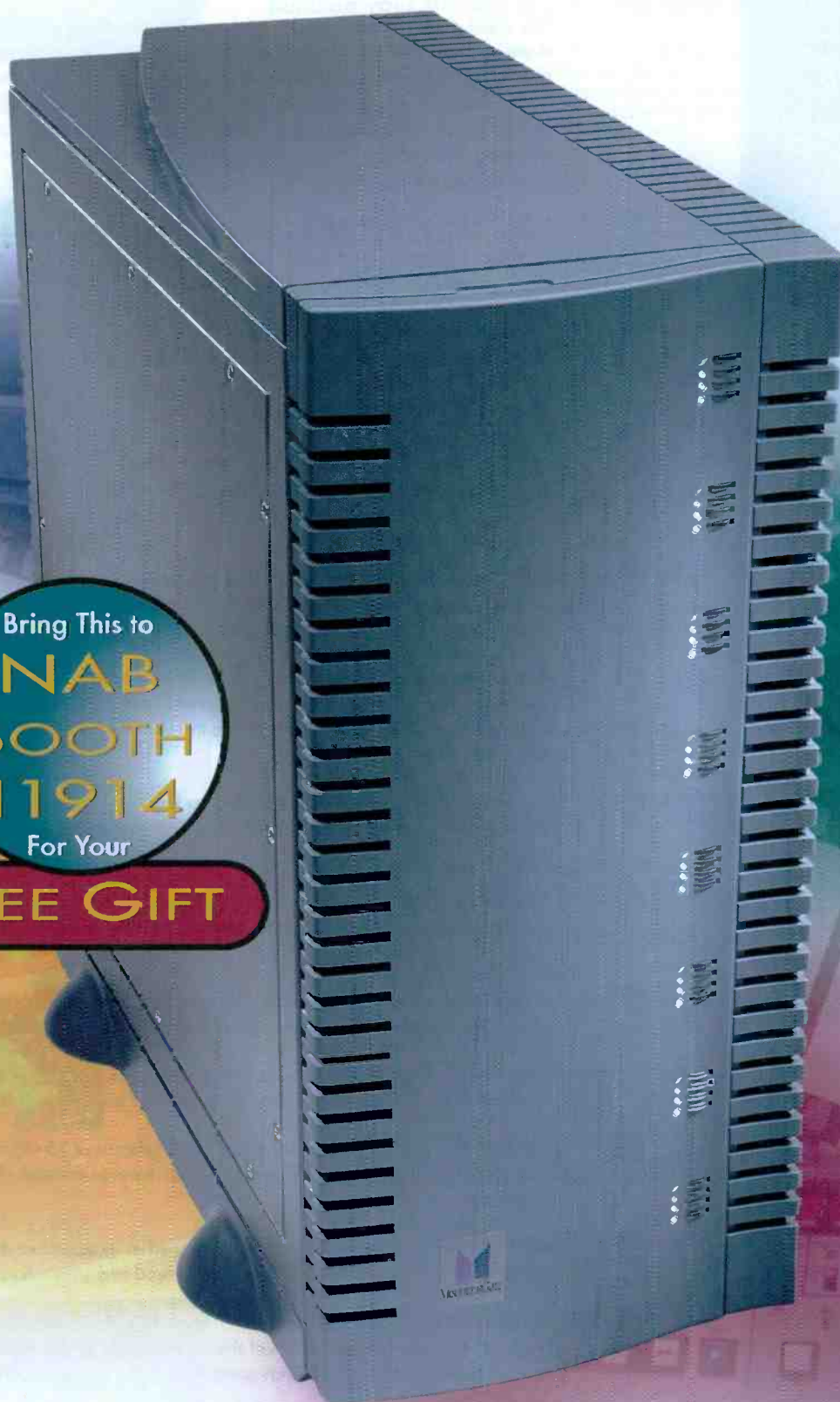
CENTRAVISION

FIBRE CHANNEL NETWORK SOLUTIONS



Bring This to
NAB
BOOTH
11914
For Your

FREE GIFT



 **MountainGate**
A Lockheed Martin Company



CentraVision Fibre Channel Disk Array

Mechanical

Cable Connectors

Standard disk array

DB9 four conductor copper cable connectors (2 each)

Disk array with daisy chain capability

DB9 four conductor copper cable connectors (4 each)

Backplane

Passive dual arbitrated loop backplane configuration with removable quad port bypass and repeater logic modules

Housing

Steel sheetmetal and steel drive trays

Disk Drives

Hot-swappable and direct pluggable 3.5" FC-AL disk drives

Dimensions

Tower configuration
Height 19.0 inches/48.3 cm
Width 8.75 inches/22.3 cm

Rackmount configuration
8.75 inches/22.3 cm
19.0 inches/48.3 cm with overlapping ear mounts
21.0 inches/53.4 cm

Depth

21.0 inches/53.4 cm

Weight

Four-drive configuration Tower - 65 lb/30 kg
Eight-drive configuration Tower - 75 lb/34 kg

Rackmount - 65 lb/30 kg
Rackmount - 75 lb/34 kg



Electrical and Environmental

System Capacity

Eight 3.5" disk drives
Over 1 Terabyte available with 16 units (126 devices max)

Data Transfer Rate

Up to 100 MB/sec (200 MB/sec full duplex) per loop

Fault Indications

Visual drive fault lights
Audible power supply alarm

Cooling

Four hot-swappable fan modules

Power Supplies

300W, Dual redundant, Hot-swappable, Auto-ranging for 120/240 VAC, 60/50 hz

Input Power Consumption

for fully loaded power supply configuration

4.0 Amps @ 120 VAC,
2.0 Amps @ 240 VAC

Certifications

Emissions
Safety

FCC Class A, CE
UL 1950, cUL C22.2-950,
TUV EN-60950

Temperature and Relative Humidity (non-condensing)

Operating

5 to 40°C (41 to 104°F),
20% to 80%
-20 to 85°C (-4 to 185°F),
20% to 80%

Non-operating temperature range



CentraVision FC Hub

Bit Rate

1.0625 Gigabit/sec,
8B10 encoded

Data Rate

100 MB/sec each direction

Standards support

Fibre Channel
Arbitrated Loop
(Electro-optical converters for optical fibre cabling are optional)

Dimensions

Height
Width
Depth

1.7 inches/43 mm
8.7 inches/221 mm
5.7 inches/145 mm

Weight

3 lb (shipping, 3.3 lb)

LED Indicators

1 amber/port - LED on indicates port bypass
1 green - LED on indicates power on

AC Voltage

100-240 VAC

Power

2 A, 50-60 Hz

Operating Temperature

0°C to 40°C

Storage Temperature

-40°C to +70°C

Operating Humidity

95% maximum relative humidity

Electromagnetic Specifications

FCC PART 15 CLASS B
(EN55022B), (EN50082-1)

Agency Approvals

UL 1950, CSA 950,
EN60950 (IEC950),
CE Mark



Warranty

CentraVision Fibre Channel Disk Array enclosure

2 years

CentraVision Fibre Channel Hub

2 years

CentraVision Fibre Channel Disk Array disk drives

Limited to the manufacturer's warranty



CORPORATE HEADQUARTERS

MountainGate
9393 Gateway Drive
Reno, Nevada 89511-8910

Tel: (800) 556-0222

Tel: (702) 851-9393

Fax: (702) 851-5533

INTERNATIONAL SALES OFFICES

Northern Europe

Tel: (44) 1256 464767

Fax: (44) 1256 59748

Southern Europe

Tel: (33) 1 42 65 39 80

Fax: (33) 1 42 65 39 71

Latin American & Asia

Tel: (702) 851-6240

Fax: (702) 851-5533



SNEAK PEEKS



Anton/Bauer is showing new InterActive 2000 PowerChargers that feature camera operations from mains, Logic Series charging, diagnostic and charging add-on modules. The InterActive 2000 system includes new powerful, lightweight battery modules compatible with all Logic Series chargers, PowerChargers and Gold Mount accessories.

**Anton/Bauer, One Controls Dr.,
Shelton, CT 06484; 203-929-1100;
203-929-9935**

Circle (1208) on Free Info Card



EEV has expanded its range of digital IOT amplifier systems with the introduction of the IOTD2100 tube. This device was derived from EEV's IOT 8505 analog TV IOT system which provides 55kW of visual power and 5.5kW of aural power in common amplification configuration at the output flange. The new digital tube will deliver 110kW of peak power in DTV applications transmitting 8-VSB or OFDM, at the output flange.

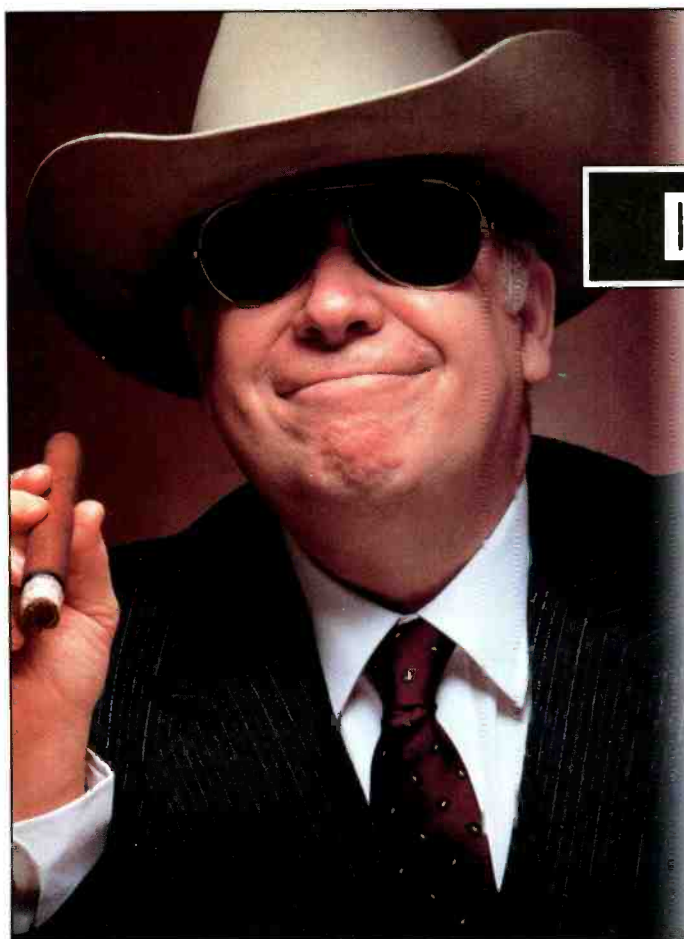
**EEV, 4 Westchester Plaza,
Elmsford, NY 10523;
914-592-6050;
fax 914-682-3922**

Circle (1209) on Free Info Card

Pinnacle Systems is exhibiting open system video products such as DVEXTREME, a Windows NT-based, 10-bit, multichannel 3-D digital effects generator. Designed for post-production and broadcast applications, DVEXTREME sets a new standard for DVE performance and affordability. Other products to look for from Pinnacle Systems include the Lightning superfast networked video storage and retrieval system and the Alladin control panel.

**Pinnacle Systems, 280 N. Bernardo Ave., Mountain View, CA
94043; 415-526-1600; fax 415-526-1601**

Circle (1210) on Free Info Card



If someone tells you they have a scan converter that matches our quality (the highest available), our features (the most available), and our price (\$14,900 suggested list price)...

Don't believe 'em!



No one has our quality for our price. Quite simply, we give you the best scan converter on the market. That's why we're the choice of the networks, broadcast, and post-production professionals when they need to convert any high-resolution computer or imaging source to broadcast-quality video output.

The 9700XL Broadcast-Quality, Autosync, Video Scan Converter

- Dynamic Pan and Zoom
- RS-232 Remote Control (Win 95 Driver Included)
- Multiple Flicker Elimination Filters
- Optional D1 Serial Digital Output (CCIR 601)
- Conversion to all major video formats (RGB, NTSC, PAL, S-Video (YIC), Betacam, true 31.5 KHz, and serial D1)

Call for a free demo today...Seeing is believing!



526 East Bidwell Street
Folsom, CA 95630
916.983.1500
Fax: 916.983.7236
Email: sales@folsom.com
www.folsom.com

See us
at NAB'97
Booth #M6330
in Multimedia
World

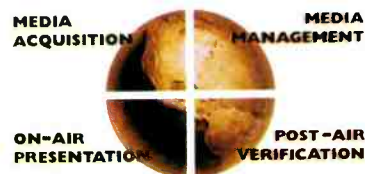
Circle (41) on Free Info Card



YOUR BUTT
HERE.

GOOD NEWS TO THOSE WARMING UP TO THE INEVITABILITY OF BROADCAST AUTOMATION

Systems, strategies and sweating bullets. Let's face it, keeping your cool in the fiery transition to video servers and broadcast automation takes more than just a seat-of-your-pants approach. It takes the people, products, vision and experience of Louth Automation. From satellite control through traffic integration, our proven track record makes Louth the worldwide leader in broadcast automation systems.



Our growing client list is a who's who of leading-edge broadcasters. Since 1988, Louth has set the benchmark for scalable station automation. So, whether you're moving from tape to disk, or facing a mega multi-channel expansion, it's no wonder why hundreds of successful broadcasters partner with Louth to get them on the air. And keep them on the air.

Feeling the heat? We'd be happy to help you take the next step. No matter where you're at in the process of transitioning your station to a new era of automation, we can help. With people. With experience. With solutions. Call us today at **415/843-3665** for more information or a demonstration of our flagship ADC-100 and the new entry-level ADC-50 System. Broadcast automation from Louth. It's the best answer to keeping your cool.



L O U T H
A U T O M A T I O N

Circle (42) on Free Info Card

MOGAMI<http://www.mogami-wire.co.jp/>

INTRODUCING NEW PRODUCTS AT NAB BOOTH No.S1931 (MARSHALL ELECTRONICS)

P/N 3173LONG RUN 110 Ω AES/EBU DIGITAL AUDIO CABLE
(for distances up to 400 m/1,300ft)**P/N 3206**VESA STANDARD VGA CABLE
(for plug and play)**P/N BNC-2964C**75 Ω ONE TOUCH PUSH-PULL
BNC CONNECTOR (crimp version)**P/N 3200**HANDY SUPERFLEXIBLE 50 Ω COAX. CABLE
(for wireless mic./ham/computer/measuring)**P/N 5095**

SCSI-3 (wide SCSI) CABLE

INTERNATIONAL DISTRIBUTORS

AustraliaGreater Union Village Technology
Phone: (08) 340 1999**Austria**Dietmar Koller Recording Equipment
Phone: 1 489 57 57**Belgium**Apex n. v.
Phone: 089/30 63 13**Canada**Cabletek Electronics Limited
Phone: (604) 942 1001**Croatia**Audio Video Consulting d.o.o.
Phone: (01) 6124 622**Denmark**D A Distribution ApS
Phone: 39 68 28 11**France**D.M.2.J. SARL
Phone: (1) 39 57 90 44**Germany**Audio-Vertrieb Peter Struven GmbH
Phone: (04106) 4094**Greece**Nick. J. Laios SA
Phone: 8629513**Hong Kong**Odyssey Engineering Company Ltd.
Phone: 2898 8111**Indonesia**PT. Multi Audio Perkasa
Phone: (021) 629 6009**Japan**MIT INC.
Phone: (03) 3439 3755**Korea**AVIX Trading Co., Ltd.
Phone: (02) 565 3565**New Zealand**Greater Union Village Technology
Phone: (09) 579 4082**Norway**LydRommet a.s
Phone: 22 37 02 18**Singapore**Team 108 Technical Services Pty. Ltd.
Phone: 748 9333**Slovenia**Audio Video Consulting d.o.o.
Phone: (061) 125 34 93**Spain**MEDIA-SYS, S.L.
Phone: (93) 426 65 00**Sweden**TTS Tal & Ton Studioteknik AB
Phone: (0) 31 52 51 50**Switzerland**ZAP SA
Phone: (022) 340 05 70**Taiwan**Advancetek International Co., Ltd.
Phone: (02) 719 2388**The Netherlands**Maarten's Sound & Vision bv
Phone: (0) 513 629120**U.K.**Plasmec Systems Ltd.
Phone: (0) 1252 366300**U.S.A.**Marshall Electronics, Inc.
Phone: (310) 390 6608**MIT INC.**MONDO UMEGAOKA BLDG. 2F, 1-33-9, UMEGAOKA,
SETAGAYA-KU, TOKYO 154, JAPAN

Phone: +81 3 3439 3755 Fax: +81 3 3439 3877

Circle (43) on Free Info Card

**SNEAK
PEEKS**

Although Quantel is keeping quiet about exactly what it will be showing this year, while visiting the factory in Newbury, England,

BE editor Brad Dick was able to peek into a couple of back rooms for this preview.

Look for a sophisticated server solution to be provided by the Quantel Clipbox. The system is capable of non-compressed and compressed storage. In the compressed mode (the system uses Grid compression) the Clipbox is capable of 5:1, 10:1 and 20:1 compression ratios. This equates to eight hours of uncompressed CCIR-601 video or up to 160 hours at the 20:1 compression level. Look for Clipbox to become Quantel's centerpiece technology for transmission, post-production and newsroom automation.

Also to be highlighted in the Quantel booth is Bravo, a creative artist's dream. Customizable in almost any way, look for Bravo to be available in a stand-alone configuration and as a subset in the Hal and Harry products.

The company also promised to have an "interesting technology demonstration" in its booth. If you want to see it, you'll have to ask, because it's being kept off the main exhibit floor. From my discussion with Quantel's managing director, Jeff Meadows, the demonstration is worth a look.

Quantel, 28 Thorndal Circle, Darien, CT 06820; 203-656-3100; fax 203-656-3459; quantel@quantel.com; www.quantel.com

Circle (1211) on Free Info Card

The new PCI transport stream generators from Digital Transport Systems offer a choice of interfaces and memory.

The TSG may be used to provide a datastream source for manufacturing tests of satellite and cable modulators, receivers and set-top decoders. For production prototype verification, the TSG's ability to source repetitively known test sequences at precise data rates is invaluable. For products that generate DVB ASI and DVB LVDS or RS-422 outputs, the TSG can be used to collect and store data from tens of seconds to several minutes into a file on a computer hard disk for verifying the integrity of the datastream. The PCI version of the TSG features all of the EISA-based capabilities plus more.

Digital Transport Systems, 11545 W. Bernardo Ct., Ste. 200, San Diego, CA 92127; 619-675-1410; fax 619-675-1412; brichards@dtssys.com

Circle (1212) on Free Info Card



Digital video processing is now available in pairs with the Pick-2 from Prime Image. The Pick-2 allows you to select any two processing capabilities in a single, rack-mounted frame. Any combination of a component time base corrector/synchronizer, direct video synchronizer, audio delay, standards converter and logo insertion card is available at your request. Even different standards—NTSC, PAL and PAL-M—can be specified singly or in combination. And future Prime Image products will be designed to work within the Pick-2 frame for compatibility and easy upgrading.

Prime Image, 19943 Via Escuela, Saratoga, CA 95070; 408-867-6519; fax 408-926-7294

Circle (1213) on Free Info Card

GET OFF IT.

INTRODUCING THE LOUTH ADC-50. A GREAT REASON TO ENTER A WORLD OF BROADCAST AUTOMATION IN ONE AFFORDABLE LEAP.

From cache-based spot insertion to totally tapeless solutions, the new Louth ADC-50 is the perfect solution for budget-conscious broadcasters who are looking for the dramatic efficiency and performance of a broadcast automation system. Based on our flagship ADC-100 – the world's leading Automation Software – the ADC-50 is your low-cost, high-performance, built-to-grow solution. The ADC-50 can be used with a wide range of cart machines for caching to video disk systems, or use it with stand-alone servers for a totally tapeless solution. With the ADC-50 you get the performance you need today with the power and flexibility to support your long-term strategy.



LOUTH ADC-50 THE AFFORDABLE AUTOMATION SOLUTION

- *Reliable, proven design keeps you on air 24 hours a day.*
- *Widest range of video disk, VTR, and cart devices gives you maximum system flexibility.*
- *Supports up to 4 on-air channels to allow future expansion to multi-channel broadcasting.*
- *Windows playlist interface is easy for new and experienced users alike.*
- *Expandable to full ADC-100 master control automation with full investment protection.*

Powerful media preparation software and a Windows-based master control system make the ADC-50 powerful, intuitive, and easy to use. Think of it. Frame accurate control, proven reliability, multi-channel broadcast potential, and an on-air look that's absolutely impeccable. Just what you'd expect from Louth.

After all, we're the leader in broadcast automation with hundreds of satisfied broadcasters worldwide. Through our products, our people, and our experience, you'll have the best engineered solution for your station. For a demo, a quote, or more information on the ADC-50, call 415/843-3665 today. Powerful Louth automation at an affordable price. It's an opportunity worth jumping on.

CALL 1-415-843-3665 FOR MORE INFORMATION

© Copyright Louth Automation 1997. All rights reserved.

Circle (50) on Free Info Card

See us at NAB – Sands Exhibit #3619

www.americanradiohistory.com

LOUTH
A U T O M A T I O N

SNEAK PEEKS



New from **Asaca** as part of the Executive Series is a large-format, flat-panel plasma monitor called the ES-42. This wide-format 42-inch plasma display gives bright, clear, adjustment-free images and provides a high-performance, multiviewer monitor in little more space than a picture on the wall.

Also from Asaca is the first product in the Media Suite Series, the MS-32. This 32-inch monitor displays high-quality 25-inch NTSC imaging and offers an impressive reference for 16:9 format productions (with up to 1,125 interlaced lines).

Asaca, 12509 Beatrice St., Los Angeles, CA 90066; 800-423-6347 or 310-827-7144; fax 310-306-1382

Circle (1214) on Free Info Card

RGB Spectrum will demonstrate the latest entries in several of its product lines, such as the RGB/Videolink 1700-D1. This versatile scan converter accepts inputs from virtually any workstation or desktop computer (screen resolutions up to 1,600x1,280 pixels) and automatically sets up the parameters for the sharpest picture. Outputs include broadcast quality NTSC and PAL composite video, S-Video and component analog video, as well as CCIR 601 digital component video for D1, Digital Betacam and other digital component tape recorders.

Other products from RGB Spectrum include the SuperView 1000, the latest product in the company's SuperView video windowing product line; the SynchroMaster 300AV, a frame-store synchronizer for computer signals; and ComputerWall, a multiscreen processor which magnifies and splits high-resolution computer images across an array of projectors, monitors or flat-panel screens.

RGB Spectrum, 950 Marina Village Prkwy., Alameda, CA 94501; 510-814-7000; fax 510-814-7026; www.rgb.com

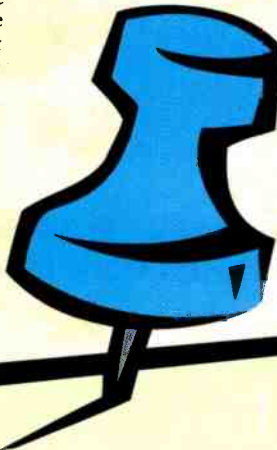
Circle (1215) on Free Info Card



Thomson Tubes Electronics will be highlighting the Diacode. With battle lines already being drawn, Thomson will be demonstrating how the Diacode offers many advantages for DTV operation. Technical brochures are available in the Thomson Tubes booth detailing two comprehensive tests run on Tetrode, Diacode and IOT transmitters. Any engineer contemplating the purchase of a DTV transmitter should review this data before making a decision. Readers can look for the battle over tube technology to heat up logarithmically at the show.

Thomson Tubes Electronics, 17 ave de Maréchal Juin, F-92336 Meudon la Foret Cdx France, +33 1 3070-3500; fax +33 1 3070-3535

Circle (1216) on Free Info Card



**DON MARKLEY
PRESIDENT,
D.L. MARKLEY AND ASSOCIATES,
PEORIA, IL**

What's going to be hot at NAB 97:
DTV and associated transmitters, antennas and STLs; HDTV cameras and recorders

What's not going to be hot at NAB 97 that has been in the past:
Large studio cameras for NTSC-only use

What I'll be looking for at NAB 97:
Towers antennas, TV transmitters and TV STLs

Where I recommend hanging out after hours:
Ruth's Chris Steak Houses

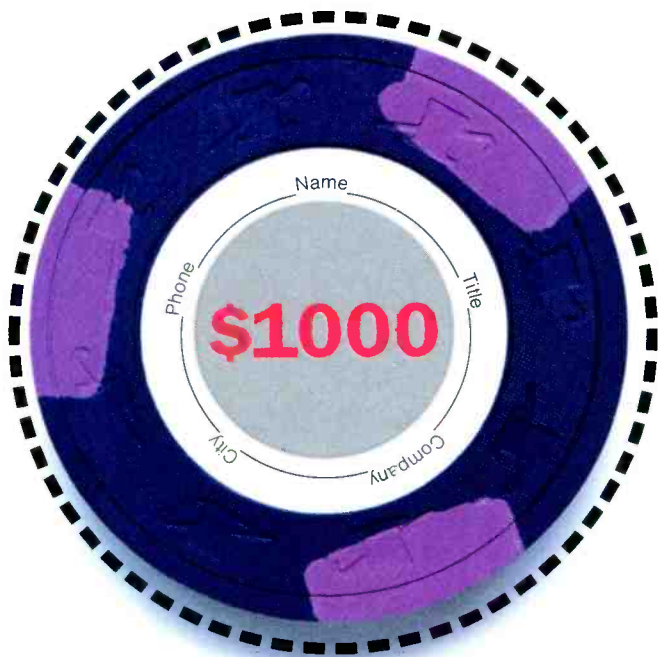
My tips for first-time attendees:
Don't even think about seeing everything. And you are not going to win your station at the tables.

My view of the industry:
I predict that a final table of DTV assignments will be released just before the show and everyone will be in shock.



NAB Booth M7363

Bring this chip to
our booth at NAB. It
could be worth \$1000.



You'll also see the only 475 MHz matrix available for under \$3000.

The AutoPatch booth is the place to be at this year's NAB show. Because along with our full line of quality matrices, you'll also have a chance to win your choice of a \$1000 casino chip or an AutoPatch matrix. Just clip out the chip above and bring it to our booth. (*M-7363 at the Sands Expo Center*) You might walk away with more than the usual literature.



The half-Y Series:

- > Affordability meets flexibility in our small half-Y series. Offers a wide variety of control and connector options. Available in 6x2, 8x2, and 8x4 configurations.



The 1-Y Series:

- > The inexpensive matrix that offers 475 MHz bandwidth for under \$3000. Available in 4x4, 8x4, 4x8, and 8x8 configurations.



The 4-YDM Series:

- > A mid-sized matrix with the features and flexibility of larger models. From 4x4 through 128x128 configurations.



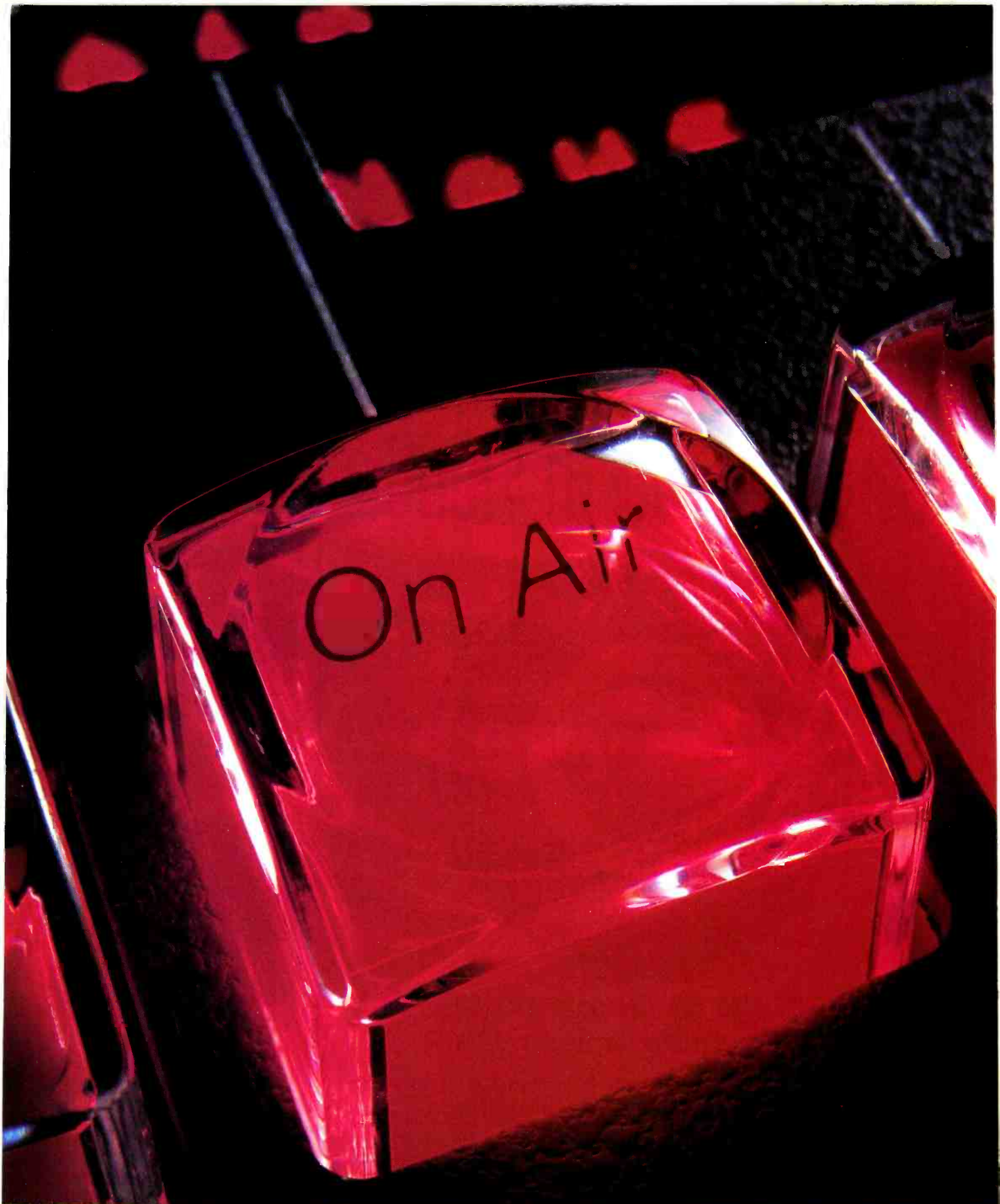
The 8-YDM Series:

- > The large custom matrix with hundreds of configurations, from 8x8 through 64x256.



AUTO PATCH

Toll Free: 800.622.0246




Phonix is a registered trademark of American Radio

**GRASS VALLEY
MASTER CONTROL**

**PROFILE DIGITAL
STORAGE**

**GRASS VALLEY
ROUTING SYSTEMS**



The feel good button.

It's that moment of truth, isn't it? Hitting the "Air" button and knowing that everything is working perfectly. For more than fifty years that feeling of confidence has been our ultimate criterion. Whether you're using our switchers, routers, file servers, or any of our products, in fact, you always know you've got the best.

Now there's a new reason to feel good: The Grass Valley™ M-2100 master control system. Digital. Multipanel. Multi-channel. The M-2100 is the focus of a true revolution in broadcast systems. You'll now have integrated Squeezeback™ effects, Profile® clip stacking, extensive keying capability and flexibility, and seamless interface with other broadcast equipment. It will take your operations into a level of efficiency you never thought possible.

For more information about Master Control and all of our broadcast solutions, call:

1-888-TEK-VIDEO dept. 603
www.tek.com/VND

Let's talk master control.

**TEKTRONIX AUDIO
METERING**

**GRASS VALLEY
DISTRIBUTION**

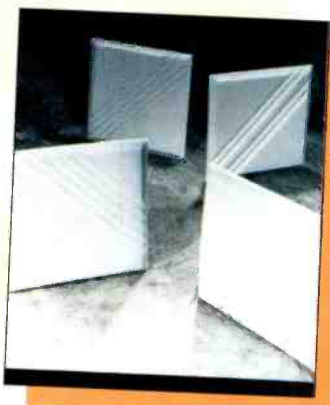
Come see Master Control in action at our booth 9914 at NAB.

Circle (52) on Free Info Card

Tektronix

www.americanradiohistory.com

SNEAK PEEKS



If too much noise is a problem, the **Acoustical Solutions** AlphaTec ceiling tiles may be what you need. The 24"x24"x2 1/2"-tiles are designed to drop into a standard 24"x24" ceiling grid or adhered to an existing ceiling surface. A two-inch thick acoustical foam backed by 1/2-inch rigid fiberboard absorbs sound within the room while blocking the transmission of sound through the ceiling.

Acoustical Solutions, 3603 Mayland Court, Richmond, VA 23233; 800-782-5742 or 804-346-8350; fax 804-346-8808; acoustic@richmond.infi.net; www.acousticalsolutions.com
Circle (1217) on Free Info Card



Garner Industries will be unveiling its new manual degausser, the MGD3. The degausser is designed to work with today's wide variety of media formats. It is ideal for erasing high coercivity tapes, cassettes, reels, hard drives and diskettes. The MGD3 uses electro-magnetic coil technology and runs on 120 VAC power.

Garner Industries, 4200 N. 48th St., Lincoln, NE 68504; 402-434-9100; fax 434-9133

Circle (1218) on Free Info Card

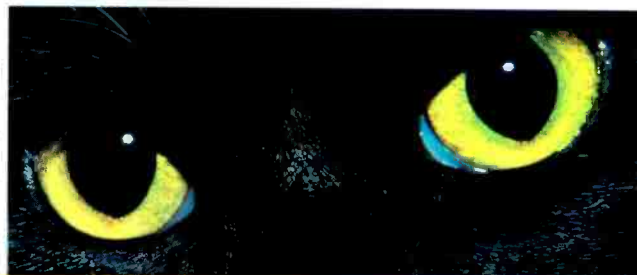
Kavouras Inc., a weather-technology developer and manufacturer, is introducing their severe weather alert system, the 1stStorm. The system will automatically and continuously monitor all official National Weather Service Doppler Radar (NEXRAD) data. 1stStorm is able to pinpoint the locations of storm activity, its speed, direction and movement, and estimate the storm's arrival time at each location in the storm's projected path.

The new StormPro, by Kavouras, provides user-defined, real-time high resolution, with control and flexibility to zoom to busy intersections.

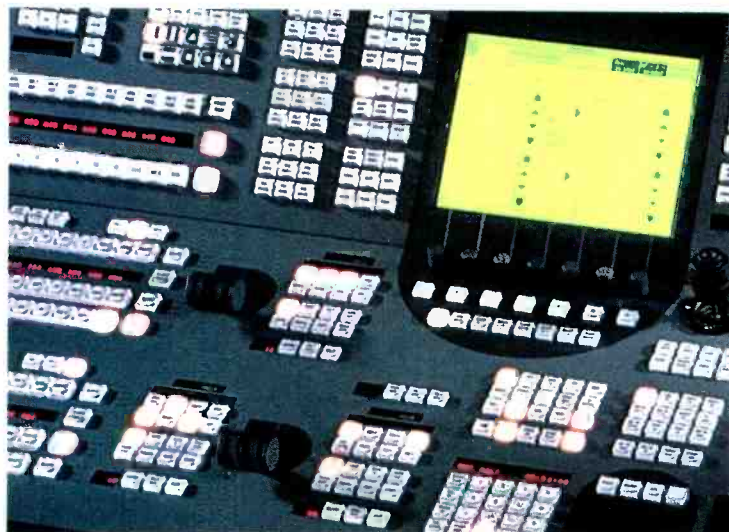
Kavouras Inc., 11400 Rupp Dr., Burnsville, MN 55337; 612-890-0609; fax 612-882-4500

Circle (1219) on Free Info Card

THE BIG PICTURE



BUY WHAT YOU NEED, NOT WHAT YOU DON'T...



With Thomson Broadcast's 9300 Component Digital Switcher, you don't pay for unwanted features.

The most modular and powerful component switcher in its class, with the most popular features.

- 1.5 or 2 M/Es with multilayering
- up to 3 DSKs
- up to 36 inputs, up to 20 auxiliary buses
- up to 6 chroma-keys
- up to 12 framestores & synchronizers
- up to 9 large border generators

The 9300: part of the Thomson family of switchers that includes 1, 1.5, 2, and 2.5 M/Es

THOMSON BROADCAST

49 Smith Street, Englewood, NJ 07631 - Tel: 1-800 882 1824
email: sales@thomsonbroad.com <http://www.thomsonbroad.com>

Circle (53) on Free Info Card

THE PROFILE DIGITAL NETWORK

Build from a strong foundation.

That means a broadcast operation that's flexible, networkable, compatible with any number of manufacturers, and easy to upgrade. In short a system based on Profile[®], digital storage solutions.

The new, four-channel, modular, and scalable PDR200 Video File Server can store up to 96 hours of RAID protected video. It has the ability to serve high quality video and audio over a Fibre Channel network at faster than real time speeds, in all industry standard formats.

But this just scratches the surface. To learn more about the entire Profile line of video digital storage solutions and the Fibre Channel network, call and order our free white paper, "Building the Fibre Channel Network."

1-888-835-8433 dept 705
www.tek.com/VND

Let's talk digital storage.

Tektronix

Circle 54 on Free Info Card

CONFERENCE TALK TO US AT BOOTH #9914 AT NAB.



DON'T GAMBLE IN LAS VEGAS.

WHEN you're at NAB in Las Vegas you don't want to take any risks: spend your time wisely – come and talk to the people who've set up more digital broadcasting systems than any other company. NDS.

You see, NDS has designed, integrated and installed some of the world's most ambitious and innovative broadcasting systems for some of the world's most demanding customers: BSkyB, DIRECTV, Galaxy Latin America, Star TV, Foxtel, Netsat, Innova, to name but a few.

Not the kind of people to be happy if their systems aren't up and running on time and on budget. We can give you multi-vendor systems, or our own industry leading end-to-end solution featuring these world-beating products and services.

- System 3000 – the leading MPEG2-DVB compression, multiplexing and modulation solution with thousands of encoders and multiplexers already in use.
- VideoGuard[®] Conditional Access system – already used by six million viewers.

**See NDS at The Sands
Stand S5520**

- Reflex[™] Statistical Multiplexing optimize picture quality and bandwidth optimization.
- 4:2:2 Chromatic encoding for dramatic picture quality for distribution.

- Provider[™], the scalable subscriber management system designed for pay media.
 - Advanced software for EPGs, NVOD and Pay Media applications.
- And global expertise in the design, integration and support of highly ambitious systems for direct to home, or via satellite, cable TV and digital terrestrial.

Don't gamble. Come and meet NDS on Stand S5520 at The Sands, NAB. We guarantee you'll go home a lot better off.

For more information call:

UK: +44 (0) 181 476 8000 US: +1 714 725 2500
Hong Kong: +852 2621 9151 Australia: +61 2 9211 6033



News Digital Systems

Circle (44) on Free Info Card
www.americanradiohistory.com

SNEAK PEEKS



Helicopters Inc. is now offering the Bell 407, the newest from the radio and TV electronic news gathering, helicopter service. The four-bladed 407 includes such features as composites, digital engine control and a wide cabin body. Helicopters Inc. is also combining efforts with SONY Electronics to develop a broadcast station that will include an editing feature which will allow crews to package a story while enroute.

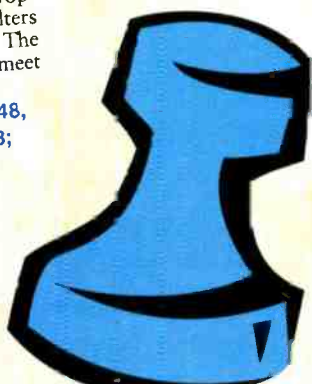
Helicopters Inc., St. Louis Downtown Airport, #14 Omega Dr., Cahokia, IL 62206; 618-337-2903 or 314-351-1400; fax 618-337-7101

Circle (1220) on Free Info Card

For over 27 years, Mobile International has designed and manufactured a variety of standard and custom-designed MICRO-VAN communication shelters for microwave, fiber-optic, satellite and wireless operations, field erectable equipment shelters and all-terrain lightweight trailers. The shelters are custom engineered to meet your requirements.

Mobile International, P.O. Box 848, Pryor, OK 74362; 918-825-1973; www.mobileintl.com

Circle (1221) on Free Info Card



Enhancements have been made to the software for the Pyramix Virtual Studio from Merging Technologies. Pyramix Virtual Studio is a digital audio workstation for Windows 95 and Windows NT 4.0 operating systems that combines hard-disk recording and editing, automated digital mixing, digital effects, networking and CD-R mastering into one package. Version 1.2 adds AudioXpress, MCS3000 motorized fader hardware remote units has also been added.

Merging Technologies also has another new application, Convert, a batch file conversion application that supports a variety of file formats.

Merging Technologies, 16835 W. Bernardo Dr., Ste. 101, San Diego, CA 92127; 619-675-9703; fax 619-675-2247

Circle (1222) on Free Info Card

ED FRATICELLI
DIRECTOR OF ENGINEERING,
PRODUCTION MASTERS,
PITTSBURGH, PA

What's going to be hot at NAB 97:
The ATV digital broadcast standard, digital production servers and random-access disk arrays

What's not going to be hot at NAB 97 that has been in the past:
Non-linear off-line edit systems, broadcast VTRs (with the exception of the small-format compressed digital formats for news)

What I'll be looking for at NAB 97:
Digital production tools, servers, archiving systems, serial digital recording systems, tools and techniques for DVD and other non-broadcast distribution channels

What I'll be checking out for an imminent purchase:
Digital routing switches

The conference sessions I want to attend:
Digital TV sessions

Going out after hours:
Phillips Supper Club

Location: downtown Las Vegas and the Fremont production side

SNEAK PEEKS



Digital Processing Systems is featuring its DPS Hollywood Uncompressed 10-Bit D1 video disk recorder at this year's NAB conference. The DPS Hollywood is a video recording solution for high-end animation, rotoscoping and video/graphics compositing. The recorder reduces the cost per minute for uncompressed D1 video recording and provides recording times of 5-8 minutes.

Also appearing at NAB, is Spark, Digital Processing Systems first direct digital video editing system.

Digital Processing Systems, 11 Spiral Dr., Florence, KY 41042; 606-371-5533; fax 606-371-3729

Circle (1223) on Free Info Card



Lightware Inc. has brought wheels to its multifunction camera case, with its new product, the LightWalker (LW1422). Along with all the features of the Lightware Multi Format Cases, the LW1422 also includes an interior handle, two inside zippered mesh pockets and a kickplate. The LightWalker can be used as a protective case for cameras, lenses, accessories, lights, audio equipment, as well as a variety of laptop computers with scanner and modem.

Lightware Inc., 1329 West Byers Place, Denver, CO 80223; 303-744-0202; fax 303-722-4545

Circle (1224) on Free Info Card

Image Video will be introducing its presentation switchers, models 8321 & 8312 master control. The 8321 is a 20-input stereo audio follow video switcher with two additive keyers, a frame sync by-pass feature, machine control and an RS-422 automation port. The 8312 has almost the same features as the 8321, with the exception of having 12 inputs and a smaller-sized control panel.

Also the XDS series of serial digital video and AES audio routing switchers along with the XVS series of analog video and audio routing switchers are now available as 64X64, 32X32 and 16X16 configurations.

Image Video also unveils the 1500 series of tri-color remote display units and 1600 series of single color display units, capable of up to 30 fixed size characters or 36 proportional spaced characters.

Image Video, 705 Progress Ave., Unit 46, Scarborough, Ontario, Canada M1H2X1; 416-438-3940; fax 416-438-8465; avanags@imagevideo.com

Circle (1225) on Free Info Card

SWITCHING

DISTRIBUTION

TIMING

ENCODING

DECODING

TRANSCODING

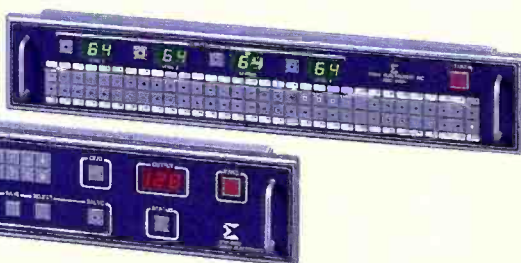


Visit Booth #9983 at NAB-Las Vegas

Switchers that will grow with you.



The Series 9600 Switchers are totally modular, allowing customer-specified configuration for Audio, Video, Y-C, RG3, or CAV; and easy upgradability as needs change. Available in sizes 16x16 through 128x128. Standard features include four levels of switching, RS-232/422 control, and Sigma's 5-Year Parts & Labor Warranty.



For more information or your nearest Sigma dealer, contact:

SIGMA ELECTRONICS INC.

1184 Enterprise Road, P.O. Box 448, East Petersburg, PA 17520-0448
Phone 717-569-2631, Fax 717-569-4056

Circle (45) on Free Info Card



Look To Sencore/AAVS For All Your Video Testing Needs.

**Digital
Video**

**RF
Video**

**Baseband
Video**

MPEG-2 Testing

**Digital
Broadcasting**

Sencore/AAVS has the instrument to make your video troubleshooting journey easier and faster than ever before. Whether you're working with analog, CCIR601 composite or serial digital, or MPEG-2 compressed digital video — we offer unique and specialized instruments with exclusive tests and analyzing capabilities that will simplify your life — and ultimately make your customers happier.

See us at NAB Booth #11976

Circle (46) on Free Info Card

We are your complete video analyzing connection.

For more information on Sencore or AAVS's complete product line,

call Sencore/AAVS (736-2673), or 1-800-769-AAVS (2287) today.

SENCORE AAVS

3200 Sencore Drive, Sioux Falls, SD 57107

SNEAK PEEKS



The latest addition to the Norpak family of TV data broadcast products is the TTX74X. It is for the reception of high-speed data transmitted in the vertical blanking interval of any standard TV signal. The TTX74X contains a standard broadcast TV tuner, processor and all circuitry necessary to capture, decode and error-correct TV data formatted per the NABTS or WST Packet 31 standards.

Norpak will also demonstrate its new VBinet System for gathering and broadcasting Internet content over the TV signal VBI.

Norpak, 10 Hearst Way, Kanata, Ontario K2L 2P4, Canada; 613-592-4164; fax 613-592-6560; info@norpak.ca; www.norpak.ca

Circle (1226) on Free Info Card

Modulation Sciences' msl 320 precision TV demodulator provides advanced, accurate measurement and monitoring of a station's visual and aural signal at a fraction of what precision demodulators now cost. It includes a high-quality composite baseband aural output for multi-channel TV sound and can drive any wideband input product. A custom Nyquist SAW filter ensures the most accurate video detection.

Modulation Sciences, 12A World's Fair Dr., Somerset, NJ 08873; 800-826-2603 or 908-302-3090; fax 908-302-0206

Circle (1227) on Free Info Card



International E-Z Up, Inc. has a full line of products to help your station stand out at trade shows, concerts or remote broadcast events. One of the models, the Eclipse, features a durable, rust-proof white powder-coated steel frame with glider inserts that allow for a smooth opening and closing. Similar to the Eclipse, is the Encore model which features a higher peak.



International E-Z Up, Inc., 1601 Iowa Ave., Riverside, CA 92507; 800-45-SHADE; fax 909-781-0586; www.ezup.com

Circle (1228) on Free Info Card

**PHIL HEJTMANEK
VICE PRESIDENT OF ENGINEERING,
WTVS-TV, DETROIT, MI**

What's going to be hot at NAB 97:
DTV transmitters and antennas, video compression, low-cost digital tape formats (DVC Pro, Digital S, Beta SX)

What's not going to be hot at NAB 97 that has been in the past:
Non-linear editors

What I'll be looking for at NAB 97:
DTV transmission hardware, serial digital video products (routers, terminal gear), digital disk recorders and RAID arrays, Fibre Channel-based products

What I'll be checking out for an imminent purchase:
Character generator and still-store products

The conference sessions I want to attend:
Digital TV transmission, facility design

Changes I'd like to see made at NAB 97:
The show is too big. It's almost impossible to cover all the exhibits.

My tips for first-time attendees:
Wear the most comfortable shoes you have. Don't try to carry too much product literature around. Use the magnetically coded address cards with your badge to have materials mailed to you.

My view of the industry:
This is a great time to be an RF-oriented engineer, and a digit-head, too.



SNEAK PEEKS



BAF Communications Corporation is introducing the newest version of its SNV-19. The Ford Econoline-based satellite news vehicle is making its American premier as a hybrid analog and digital Ku-band satellite news gathering vehicle. The SNV-19 uses a composite Intelsat and Eutelsat "Type" approved diamond-shaped 1.5-meter antenna. In addition, the BAF Centurion positioner uses a motorization system developed for the U.S. Military Strategic Defense Initiative.

BAF, 316 Northstar Court, Sanford, FL 32771; 407-324-8250; fax 407-324-7860

Circle (1229) on Free Info Card



Emcee Broadcast Products announced a design change to its "F" series of low-power UHF transmitters. The changes made to model TTU1000F include a redesign of its four final amplifier drawers into one, through the use of higher capacity cooling fans and custom-designed heat sinks that quickly dissipate heat. Additional protection is provided by the milling of circulators into the body of the heat sinks. The compact transmitter line features common amplification and frequency control architecture allowing channel changes in the field from channels 14 through 69.

Emcee, P.O. Box 68, Susquehanna St. Ext., White Haven, PA 18661; 800-233-6193 or 717-443-9575; fax 717-443-9257

Circle (1230) on Free Info Card



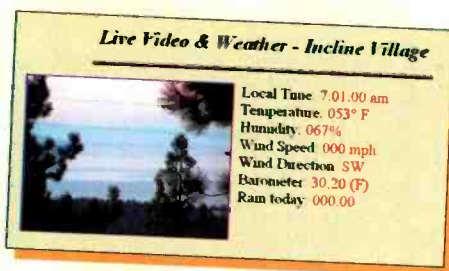
Pesa Switching is introducing some innovative routing switcher solutions, such as the Ocelot routing switcher. It is housed in a one-rack unit chassis and offers modular flexibility. Ocelot modules are available in analog and digital, audio and video versions, and are interchangeable in the same universal Ocelot frame. The product line offers 250MHz wide bandwidth analog switching and 560Mb/s serial digital for demanding multimedia applications.

Pesa Switching, 330A Wynn Dr., Huntsville, AL 35805; 800-328-1008 or 205-726-9200; fax 205-726-9271; salesinfo@pesa.com; www.pesa.com

Circle (1231) on Free Info Card



SNEAK PEEKS



personalities can then display a toll-free number which viewers can call 24-hours a day. Internet users can access all of the live weather and video information through The Real-Time Weather Network.

Baron Services, 2121 Metro Circle, Huntsville, AL 35801; 205-881-8811;
fax 205-881-8283; www.baronservices.com

Circle (1232) on Free Info Card



For digital dubbing applications, **Digital Audio Research** will be showing the OMR8 open media recorder. It provides up to 24-bit per sample resolution, standard 18-bit A-D and D-A converters and replay direct from magneto optical or hard disk. Recording time is maximized via two options: a 2.6GB optical disk allows 30 minutes per side using all eight tracks or two hours per side for two tracks; or alternatively, an 8GB hard disk increases the available time to three hours for eight tracks and 12 hours for two.

Taking center stage at the Digital Audio Research booth, you'll also find their flagship 16-channel SoundStation Gold and the compact Sabre Plus editing system.

Digital Audio Research, 2 Silverglade Business Park, Leatherhead Rd., Chessington, Surrey KT9 2QL, England; (01372) 742848;
fax (01372) 743532

Circle (1233) on Free Info Card

An advanced new generation of digital disk recorders has been released by **Drastic Technologies**. This new line of DDRs deliver significant image quality improvements, superior VTR emulation and advances in control and integration. All DDRs in the product line offer a full complement of features including a standard back panel with real world connections. Functions include editing, time delay, time-lapse recording, GPI triggered playback, variable length loop record, still/clip store and non-linear playback with audio scrub.

Drastic, 37 Kodiak Crescent #6, Downsview Ontario M3J 3E5 Canada; 416-636-4444;
fax 416-636-4454; drastic@netrover.com;
www.explorer.net/drastic

Circle (1234) on Free Info Card

TROMPETER'S BROADCAST PRODUCT GUIDE

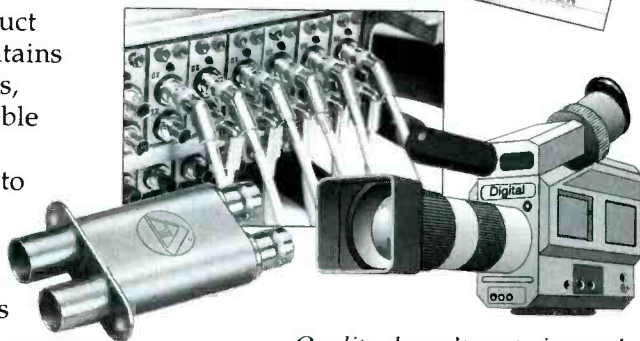
YOUR CONNECTION FOR Broadcast • Wireless • Broadband

Trompeter, the leading manufacturer of RF products, is providing a NEW "Broadcast Product Guide" for audio and video applications. It contains 20 pages of patch jacks and patching accessories, standard and custom panels, connectors and cable assemblies.

This catalog is a versatile tool and easy to use guide for product selection when selecting standard and digital components for broadcast stations, Electronic News Gathering (ENG) and remote vans, transmitters and towers, as well as wireless systems.

Call today for a new Broadcast Product Guide 1-800-982-2629.

(800) 982-COAX • (818) 707-2020 • Fax (818) 706-1040 • E-mail: trompeter@worldnet.att.net • <http://www.trompeter.electronics.industry.net>



ISO 9001 Certified

Quality doesn't cost...it pays!
TROMPETER ELECTRONICS, INC.

31186 LaBaya Drive, Westlake Village, CA, U.S.A. 91362

TAPE IS TAPE IS TAPE IS TAPE IS TAPE.
TAPE IS TAPE IS TAPE IS TAPE IS TAPE.
TAPE IS TAPE IS TAPE IS TAPE IS TAPE.
TAPE IS TAPE IS TAPE IS TAPE IS TAPE.
TAPE IS TAPE IS TAPE IS TAPE IS TAPE.
TAPE IS TAPE IS TAPE IS TAPE IS TAPE.
TAPE IS TAPE IS TAPE IS TAPE IS TAPE.
TAPE IS TAPE IS TAPE IS TAPE IS TAPE.

GET SERIOUS.



Engineered to Reflect Your Moment

QUANTEGY

Circle (49) on Free Info Card

www.americanradiohistory.com

SNEAK PEEKS



Penny & Giles will be highlighting broadcast applications of its audio multiprocessor system. Praised for its high sonic quality, this product provides crystal-clear 24-bit audio resolution and uses fast 32-bit floating point architecture.

Demonstrations will also take place on the new Mastering Suite. The new package provides a powerful set of processors.

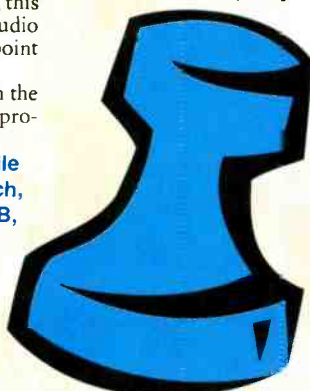
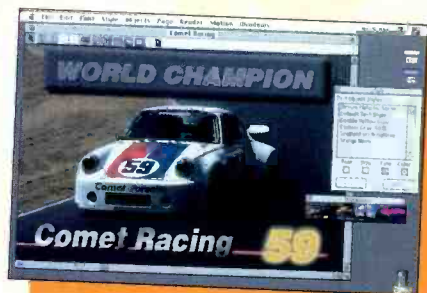
Penny & Giles, Units 35-36, Nine Mile Point Industrial Estate, Cwmfelinfach, Ynysddu, Newport, Gwent. NP1 7JB, United Kingdom; (01495) 202000; fax (01495) 227243

Circle (1236) on Free Info Card

It is easy to perform complex text and graphics effects with the updated version of Comet/CG 3.5 and the Comet/CG Animation Module from **McRoberts Software**. The updated version of Comet/CG includes numerous enhancements for smoother and faster titling and the new animation module provides sophisticated video animation capabilities, such as subpixeling for smoother animations and multilayer compositing for independent control of individual objects. A notable feature of the Comet/CG 3.5 and Animation Module software is the ability to key text and graphics over video.

McRoberts Software, 7322 Whitehall Dr., Indianapolis, IN 46256; 800-893-0043 or 317-842-5097; fax 317-842-0084; info@cometcg.com

Circle (1235) on Free Info Card



When you are under pressure to get the sound there, **Musicam USA** has the solution for you. The RoadRunner codec provides 15kHz mono on a single IDN "B" channel and 20kHz on a full IDSN line. It comes complete with three mixing inputs, two dedicated to mics and one selectable for mic and line levels. Two separate headphone monitoring circuits are provided, each with separate send and receive level controls.

Musicam, 670 N. Beers St., Bldg. 4, Holmdel, NJ 07733; 908-739-5600; fax 908-739-1818

Circle (1237) on Free Info Card

**LOUIS LIBIN
DIRECTOR, TECHNOLOGY,
NBC, NEW YORK, NY**

What's going to be hot at NAB 97:
Digital transmission and distribution equipment, working non-linear editors, "consumer" electronic appliances (i.e., \$300 video editors)

What's not going to be hot at NAB 97 that has been in the past:
Routers and switchers over \$100,000

What I'll be looking for at NAB 97:
Digital television, communications products (R²), test equipment, DSL systems

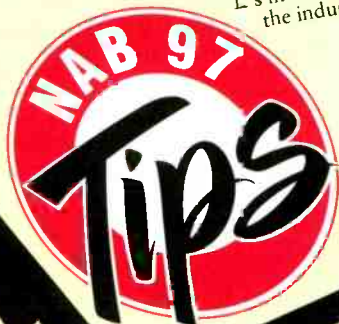
The conference sessions I want to attend:
Advanced TV, non-linear editing, transmission systems

Where I recommend hanging out after hours:
Skydiving simulator at Flyaway (just west of the Convention Center), the roller coaster at Stratosphere Tower, Mediterranean deli across from Circus Circus

Changes I'd like to see made at NAB 97:
Tighter screening of conference papers. There's too much selling and not enough "big picture."

My tips for first-time attendees:
Build a schedule and stick to it. This applies to both the exhibit floor and papers sessions.

My view of the industry:
It's in flux and changing fast. Some new technologies may change the industry dramatically, while others may have no significant effect.



serious tape.



QUANTEGY

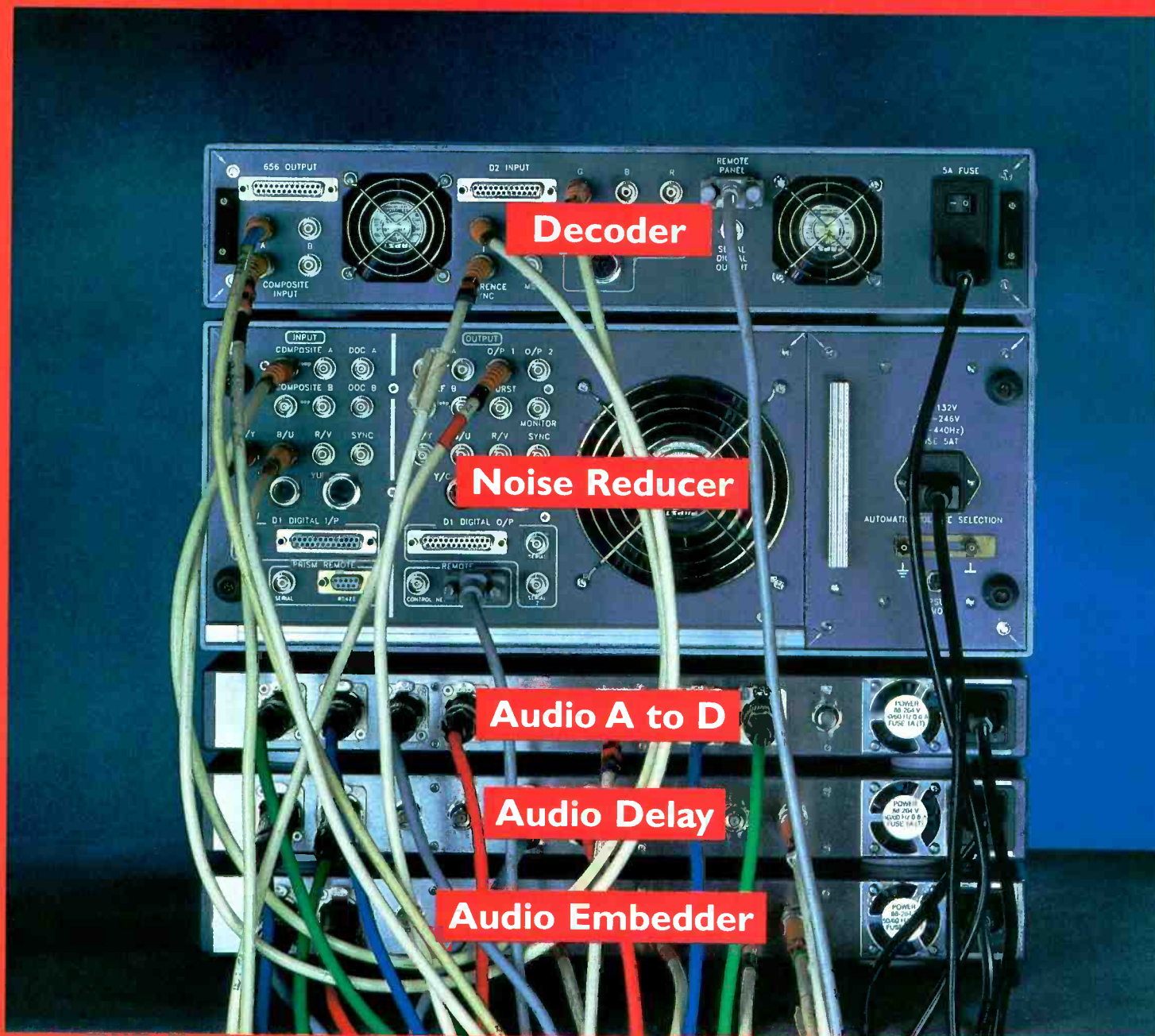
Engineered to Reflect Your Moment



tel. 800/752-0732 • fax 800/628-0535

www.quantegy.com

Circle (55) on Free Info Card
www.americanradiohistory.com



When first compressions count, you can count on Snell & Wilcox.

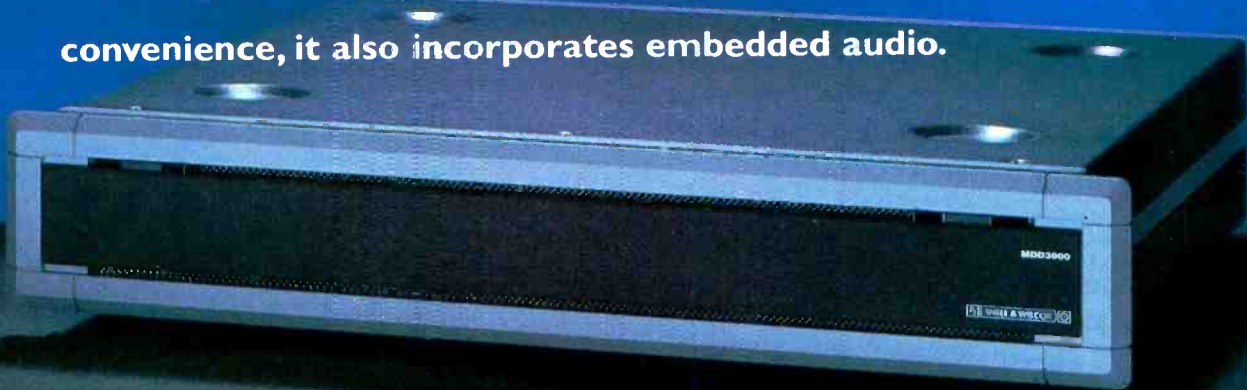
It was the word "compression" that gave us the idea

It takes a whole stack of black boxes to convert analog signals for compressed satellite transmission.

Or rather, it used to.

Now we have integrated all these functions into a single 2U box, cutting down on cost, real estate and the potential for connector glitches.

The unique PROFIX draws on our award-winning compression pre-processing technology. It employs sophisticated Snell & Wilcox decoding and noise reduction. And, for ultimate signal handling convenience, it also incorporates embedded audio.



PROFIX MDD3000 Decoder Pre-processor



For more information please contact us at:

USA Tel: +1 408 260 1000 Fax: +1 408 260 2800 **UK** Tel: +44 (0) 181 607 9455 Fax: +44 (0) 181 607 9466

France Tel: +33 1 45 28 1000 Fax: +33 1 45 28 6452 **Germany** Tel: +49 611 99 08 40 Fax: +49 611 30 57 36

India Tel: +91 11 641 2609 / 622 8014 Fax: +91 11 621 8777 **Japan** Tel: +81 3 3446 3996 Fax: +81 3 5449 7392

Russia Tel: +7 095 248 3443 Fax: +7 095 248 1104 **Singapore** Tel: +65 332 5455 Fax: +65 332 5466



Circle (56) on Free Info Card

www.americanradiohistory.com

SNEAK PEEKS



Nvision has developed the NV321 protection switch designed to provide "fail-safe" continuous digital audio outputs for multichannel digital broadcasting applications. The module accepts two synchronous or asynchronous AES audio inputs (or analog inputs via optional NV1035 A-to-D converters) and continuously monitors the health of each datastream. Should either input fail, the output will be switched to the remaining good signal and an alarm will be activated.

Nvision, P.O. Box 1658, Nevada City, CA 95959; 916-265-1010; fax 916-265-1000

Circle (1239) on Free Info Card



MountainGate is introducing the complete Fibre Channel (FC) Network Solution designed and optimized for broadcast and post-production. The company's FC system offers you the ability to transport digital media at high speeds, to build storage systems with capacities large enough for the demands of digital video and to bring networking and storage together in an all encompassing solution. This allows users at all workstations in a facility to work together in sharing the same material.

MountainGate, 9393 Gateway Dr., Reno, NV 89511; 702-851-9393; fax 702-851-5533

Circle (1238) on Free Info Card



It is now possible to be in two places at one time with Orad's latest development for the CyberSet. Virtual Presence allows a live feed from a remote location to be used to transport a remote actor directly into the local virtual studio so that the remote actor can interact with others in the local studio.

Orad 1285 Avenue of the Americas, 35th Floor, New York, NY 10019; 212-554-4225; fax 212-554-4224

Circle (1240) on Free Info Card

STEVEN M. BLUMENFELD
VICE PRESIDENT TECHNOLOGY,
GTE INTERACTIVE MEDIA,
CARLSBAD, CA

What's going to be hot at NAB 97:
MPEG/DVD, video and audio compression as it relates to networked (Internet and other) delivery

What's not going to be hot at NAB 97 that has been in the past:
New video formats

What I'll be looking for at NAB 97:
Internet technology, HDTV data delivery, voice-over-network technology

What I'll be checking out for an imminent purchase:
Media servers

Where I recommend hanging out after hours:
New York, New York hotel, and Swiss Cafe (a very out-of-the-way restaurant with great food)

My tips for first-time attendees:
Wear sneakers. Check the perimeter aisles for the smaller booths. This is where you'll find more interesting new ideas.

My view of the industry:
The industry is evolving from its one-to-many origins to a many-to-many future.



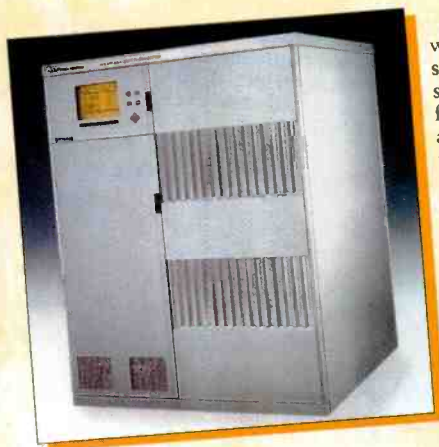
SNEAK PEEKS



Integrated Photonic Technology (Iptek) is premiering the IMTRAN DS-3 interface, a data communications module for IMTRAN digital fiber-optic transmission systems. When used with IMTRAN CQ-series systems, this plug-in module set provides fiber-optic transmission of two 45Mb/s, DS-3 channels for applications such as compressed video transport or two-way telephone systems. The dual S-3 interface allows IMTRAN systems to carry uncompressed video and audio, as well as compressed video, telephony and computer data, all within a single terminal using one fiber.

**Iptek, 2330 Faraday Ave.,
Carlsbad, CA 92008;
760-438-8362; fax 760-438-2412;
iptek@tacom.com**

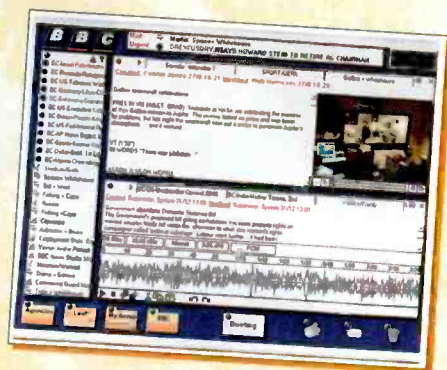
Circle (1241) on Free Info Card



Electronica Industriale came all the way from Italy to show several products such as the Linea Stone, a 5kW TV UHF solid-state transmitter. This transmitter features a high level of redundancy (eight amplifiers and two exciters), on-air module exchange, dual driver with active backup, air cooling and normal or precision frequency offset operation. It complies with the NTSC standard and is compatible with the digital signals of the DVB and 8-VSB standards.

**Electronica Industriale, 20035
Lissone (MI), via Filippo Turati 7,
Italy; (039) 7398.1; fax (039) 483395**

Circle (1242) on Free Info Card



A revolutionary new TV news production system is being developed by **The Associated Press** for the British Broadcasting Corp. The Electronic News Production System (ENPS) uses a Windows-based program to combine text, audio and video on BBC terminals and will link BBC radio and TV journalists, production areas and archives in more than 100 locations. The system manages all phases of newsroom production, from story assignments to on-air broadcasts and will be the largest broadcast newsroom system installation in the world when completed.

**AP Broadcast News Center, 1825 K St., NW,
Washington, DC 20006-1253; 800-821-4747 or 202-
736-1152; fax 202-736-1107; apbroadcast@ap.org**

Circle (1243) on Free Info Card

IF BUYING A Virtual Studio

DEPENDS ON

ease of use

Price

Performance

In reality there is only one...



Radamec Inc. 1916 Mary Ellen Lane, Scotch Plains NJ 07076. Tel: +1 908 518 0685 Fax: +1 908 518 0687.
E-Mail: radamecinc@delphi.com.

RADAMEC
BROADCAST SYSTEMS

Radamec Broadcast Systems Ltd, Bridge Road, Chertsey Surrey KT16 8LJ England.
Tel: +44 (0) 1932 561181 Fax: +44 (0) 1932 568836. E-Mail: radamec@delphi.com.

Virtual Studio
Division

Circle (57) on Free Info Card

See us at NAB Booth #9376

March 1997

Broadcast Engineering

103

www.americanradiohistory.com

SNEAK PEEKS



AVS Graphics will be unveiling the Manuscript Elite Dual Channel character generator. Originally introduced in 1992, AVS's Manuscript family of character generators was designed specifically to meet the practical requirements of the typical broadcast suite. Operational features include a dual-channel option kit, dual-channel dual-user mode, two-channel dual-user mode and dual-channel single-user mode.

AVS Graphics, 5 Mead Lane, Farnham, Surrey GU9 7DY England;
+44 (0) 1990 003220; fax +44 (0) 1990 003203; info@avsg.co.uk

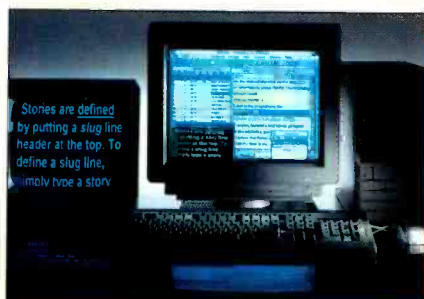
Circle (1244) on Free Info Card



The **Belar TVM-230** is a DSP-based, microprocessor-controlled digital BTSC TV stereo monitor/analyzer. It digitizes the composite base-band signal and decodes the stereo multiplex portion using digital signal processing techniques. Unlike an analog design, a DSP-based design is immune to variations due to temperature or the aging and tolerance of components. As a result, the TVM-230 attains superlative performance while requiring virtually no adjustment.

Belar Electronics Laboratory Inc., Lancaster Ave. at Dorset,
Devon, PA 19333; 610-687-5550

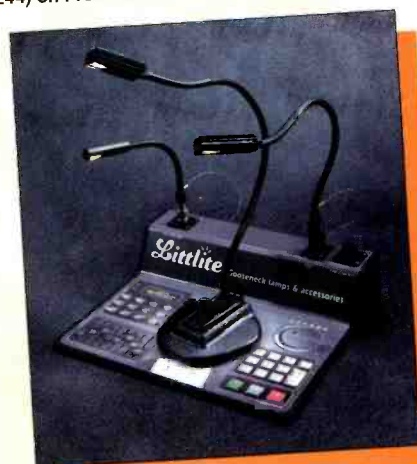
Circle (1245) on Free Info Card



On show for the first time, check out the +WinPlus VGA+ (photo), a specially developed version of the popular +WinPlus+ teleprompting system from **BDL Auto-script**. Also on display, see the company's latest lightweight on-camera units, the six-inch and 10-inch TFT flat-screen displays and the seven-inch high-brightness display designed for use with the SteadiCam.

BDL Autoscript, 3280 Sunrise Hwy,
Ste. 294, Wantagh, NY 11793

Circle (1246) on Free Info Card



New from **CAE** is the flexible Littlite Goose-neck Lamp. The lamp has a fully-adjustable dimmer and is equipped with a chassis. Littlite lampsets come assembled and are ready for easy surface-mounting. The lamps are available in 6-, 12- and 18- inch lengths, and come with a six-foot cord and snap-mount set for easy removable mounting.

CAE Inc., 10087 Industrial Dr.,
Hamburg, MI 48139;
810-231-9373; fax 810-231-1631

Circle (1247) on Free Info Card



ECHOLab

Studio Quality Video Switchers

Digital Upgradeable

ECHOLab MVS video switchers are already known for their easy analog growth path. With one video board they are composite. Add a second for Y/C. Add a third for full component.

Now ECHOLab MVS switchers are also **digital upgradeable**. You can gracefully add digital capabilities in the future by just swapping the analog chassis for an upcoming digital one. See our new digital chassis at NAB97, it's Windows NT™ open architecture will fit right into your studio's network

Choose the MVS model that's right for you. The MVS3 includes panel memory. The MVS5 adds timeline sequence memory. The MVS6 delivers the best price/performance in the industry thanks to its 2 1/2 M/E's. The award winning MVS9, features 24 direct access inputs and dual chromakeyers.

Video professional in over 50 countries rely on ECHOLab switchers. For a quarter century, ECHOLab has earned a reputation for studio quality and rock-solid reliability.

Model	Inputs	M/E's	Keyers	Price From
MVS3	8-12	1 1/2	2	\$7,995
MVS5	12-22	1 1/2	2-3	\$9,995
MVS6	13-22	2 1/2	5	\$17,995
MVS9	24	2 1/2	5	\$32,900

For more information and an ECHOLab representative near you call 617-273-1512, Fax 617-273-3275, or visit us at:

www.echolab.com

New Digital Chassis

See it at
NAB97, Booth 1638



Modular Chassis

The MVS9



The MVS6

The MVS5

The MVS3

Circle (54) on Free Info Card

ECHOLab

175 Bedford Street Burlington, MA 01803

Circle (58) on Free Info Card
www.americanradiohistory.com

SNEAK PEEKS



The latest from **K-Tek** are the K-Tek Poles, an advanced line of strong, lightweight microphone boom poles. The poles are engineered from eight layers of precision ground graphite and burnished to produce the low handling-noise finish. The K-Tek Poles feature telescoping sections with jam-resistant captive collets, tops with slots for threading cable and bottom coupling.

M. Klemme Technology Corp., 5417 Cahuenga Blvd. Unit D, N. Hollywood, CA 91601; 818-766-0835; fax 818-766-2859

Circle (1248) on Free Info Card



Nova Systems will debut several new signal processing modules for its StudioFrame signal processing system. Designed as a system of modular building blocks in a flexible packaging format, the StudioFrame system efficiently combines a wide variety of function modules into more complex function groups, all in one equipment mainframe. The scaleable analog/digital nature of the StudioFrame design allows it to be easily reconfigured and/or upgraded as standards requirements evolve.

Nova Systems, 50 Albany Turnpike, Canton, CT 06019; 860-693-0238; fax 860-693-1497

Circle (1249) on Free Info Card



Broadcast Video Systems is featuring the VITS-2 video analyzer that can monitor video quality remotely. Any line of the video field, including the VBI, can be sampled, digitized and sent via non-dedicated telco line to a PC with a VGA display capability. Once received at the PC, the signal can be displayed as an analog waveform on the computer monitor. To facilitate measurement, the display can be filtered, amplified or expanded.

Broadcast Video Systems, 40 W. Wilmot St., Richmond Hill, Ontario L4B 1H8, Canada; 905-764-1584; fax 905-764-7438; bvstor@neocom.ca

Circle (1250) on Free Info Card

**PETER DOUGLAS
VICE PRESIDENT OPERATIONS AND ENGINEERING,
TCI/NATIONAL DIGITAL TELEVISION CENTER,
LITTLETON, CO**

What's going to be hot at NAB 97:
"Real" video file servers, HDTV and 16x9 products

What's not going to be hot at NAB 97 that has been in the past:
Production switchers

What I'll be looking for at NAB 97:
File servers, 16x9 products

What I'll be checking out for an imminent purchase:
Large routers, file servers, digital interface products

The conference sessions I want to attend:
HDTV sessions

Changes I'd like to see made at NAB 97:
Wider aisles

My tips for first-time attendees:
Bring good shoes, crowd repellent and lots of time



SNEAK PEEKS

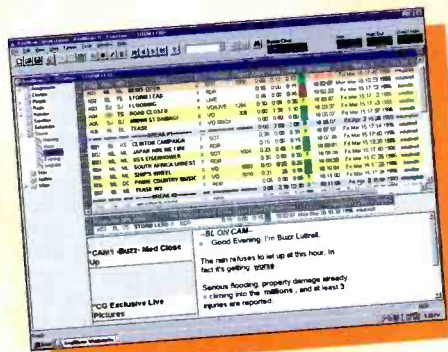


Sacrificing the creative artistic control typically obtained when using multiple lights for the convenience of a single light source for taping videos is now a thing of the past thanks to the U-3 Tri-Light Broadcast Light from **Cool-Lux Lighting Industrial, Inc.** It is actually several fixtures in one making it simple to switch from a close-up interview using only one of the three built-in lamps to an instantaneous 105W powerhouse delivering over 100lux at 100 feet when using all three lamps simultaneously.

Also look for Cool-Lux's Light and Sound Bracket and the Quick Flip Filter.

Cool-Lux, 409 Calle San Pablo #105, Camarillo, CA 93012; 805-482-4820; fax 805-482-0736

Circle (1251) on Free Info Card



Avid is formally introducing its AvidNews, its next-generation newsroom computer system. Based on over 15 years of newsroom experience, AvidNews features advanced core newsroom functionality plus the ability to browse and edit low-resolution video on the desktop, a journalist-driven Windows UI, integration with the web and sophisticated machine control.

Also from Avid is the DNG 2.0 workgroup video production system that links Avid's recording, editing and playback workstations with a production server for creating/airing news in a shared computer environment.

Avid, 1 Park W Metropolitan Tech Park, Tewksbury, MA 01876; 800-949-AVID or 508-640-6789; fax 508-640-1366; info@avid.com

Circle (1252) on Free Info Card

The **Balcar** Fluorescent Lighting System combines the efficiency of high-frequency/high-intensity fluorescence with the exceptional color rendering properties of Tungsten lighting. Energy efficient lamps and state-of-the-art optical system provide brilliant lumen output with virtually no heat. The lamps are available in Daylight or Tungsten balance and their color temperature remains constant when dimmed.

Balcar, 11 Blvd. Emile Augier, 75016 Paris, France; +33 1 45.03.00.30; fax +33 1 45.03.12.48

Circle (1253) on Free Info Card

You can convert incoming digital inputs to 24-bit analog audio signals with the db Technologies DA924 being showcased by **Audio Intervisual Design**. The 96kHz digital-to-analog converter offers a combination of superior linearity, fast and accurate response, extremely small quantization steps and low-noise performance to reproduce the finest details. The DA924 accommodates today's standard 40-50kHz sample rates and the higher rates of the new 80-100kHz standards.

Audio Intervisual Design, 1155 N. LaBrea, W. Hollywood, CA 90038; 213-845-1155; fax 213-845-1170

Circle (1254) on Free Info Card

10101 00110

SNEAK PEEKS



Quik-Cap, a new electronics package from **Image Logic Corporation**, can substantially cut the time needed to caption and subtitle a videotape. Quik-Cap uses digital processing to identify edit points in the video and the onset of speech in audio, which will save you up to 25% of the time that traditional manual editing of captions would take. Quik-Cap joins Image Logic's family of Autocaption captioning packages, and was designed to meet post-house demands for producing a high volume of broadcast-quality work.

Image Logic also introduces a Windows 95 and Windows NT version of its popular Log Producer videotape logging system, the Log Producer 32.

Image Logic, 6807 Brennon Ln., Chevy Chase, MD 20815; 301-907-8891; fax 301-652-6384; imagelogic@ibm.net; www.imglogic.com

Circle (1255) on Free Info Card



The latest **Jensen Tools** catalogs highlight a wide range of test instruments, including the new Tektronix TDS 210 and TDS 220 digital scopes. The real-time scopes feature small footprints, automated measurements, screen captures, IGS/s sample rates, multiple languages in the user interface and hard-copy operations.

Jensen Tools Inc., 7815 S. 46th St., Phoenix, AZ 85044; 602-968-6241; fax 602-438-1690

Circle (1256) on Free Info Card

One of the products that **Canon's Broadcast Equipment Division** will unveil is its new Digi-Series studio lens designed for use with the digital cameras. In addition, the company will introduce an affordable broadcast lens, the PJ20XSP, that features advanced optics and a newly developed glass that improves quality. The popular series of vari-angle prism lenses will be showcased along with a new cost-effective adapter that can be used with any of Canon's 14aX, 15aX, 20aX and 33aX lenses.

Canon, 400 Sylvan Ave., Englewood Cliffs, NJ 07632; 800-321-4388

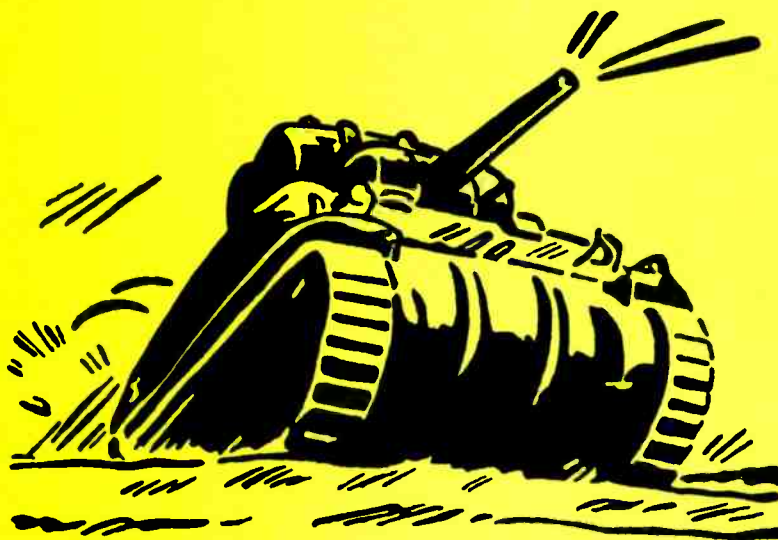
Circle (1257) on Free Info Card



Among the many products being introduced by **Leitch**, you can find a flexible compression system featuring broadcast-quality distribution MPEG-2 signals. The system permits the exchange of pre-edited and post-edited material between studios and post-production houses using standard DS3 telephone lines. The single-board module supports 4:2:2 profile at main level and fits into a three-rack unit DigiBus frame. Leitch's MPEG-2 system is also available in a new plug-in noise reduction card (3611NR).

Leitch, 920 Corporate Ln., Chesapeake, VA 23320; 800-231-9673; fax 7757-548-4088

Circle (1258) on Free Info Card



A FULL RANGE OF INTEGRATED DAB TRANSMITTERS

DAB
Digital Audio Broadcasting

CRYSTAL



REPCO



*Thomcast
worldwide
customer
service*

As a pioneering member of Eureka 147 and with the first fully-compliant systems in L band and VHF, we've been building our DAB expertise for over 10 years. Today, our DAB systems offer full compliance to industry standards, true class AB amplifiers for the lowest operating costs, modularity, ergonomics plus the availability.

The only partner that can keep you a head above the competition

THOMCAST / 1, rue de l'Hautail, 78700 Conflans-Sainte-Honorine, FRANCE / Tel. : (+33) 1.34.90.31.00 - Fax : (+33) 1.34.90.30.00
THOMCAST AG / Bahnhofstrasse, CH-5500 Turgi, SWITZERLAND / Tel. : 41 (56) 299 44 44 - Fax : 41 (56) 288 11 25
THOMCAST GmbH / Ohnweg 11-15, D-68157 Mannheim, GERMANY / Tel. : 49 (0621) 8101.1 - Fax : 49 (0621) 8101.290
COMARK / 500 Horizon Drive, Suite 505, Chalfont, PA 18914, USA / Tel. : 1 (215) 822 0777 - Fax : 1 (215) 822 9129

Circle (175) on Free Info Card

www.americanradiohistory.com



THOMCAST

SNEAK PEEKS



New triax/coax camera control and robotic capabilities will be exhibited at the **Telemetrics** booth. The company will display the TM-9660 component triax camera control system with a newly designed camera control unit. Another product, the PT-MP mini-pan/tilt mechanism was specifically designed for today's small, high-performance CCD cameras. Telemetrics also has the CP-SRD serial receiver/converter for the company's comprehensive line of pan/tilt mechanisms. Other products to watch for include the CP-T-IR infrared control transmitter, the 360° continuous pan/tilt option, and the TRO-MO-F preset trolley option for motorized camera trolley systems.

**Telemetrics, 6 Leighton Place,
Mahwah, NJ 07430; 201-848-9818; fax
201-848-9819**

Circle (1255) on Free Info Card



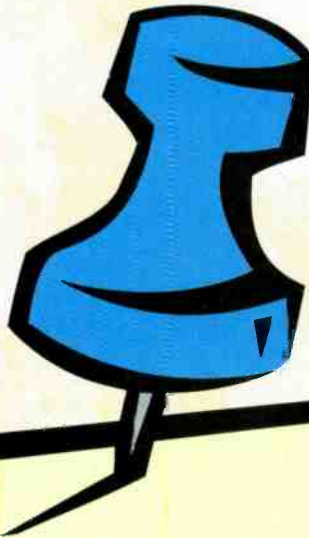
DigiTech is introducing its newest signal processor, the VCS-1. This new studio dynamics processor combines two channels of 12AX7A tubes, full-featured compression, de-essing, noise gating and peak limiting into a 2U rack chassis. The VCS-1 also features

adjustable controls and switchable characteristics.

The Vocalist Workstation, also new from DigiTech, is a four-voice vocal harmony effects processor designed for use in both live and studio applications.

**DigiTech, 8760 S. Sandy Fwy., Sandy, UT 84070;
801-566-7005; fax 603-672-4246**

Circle (1260) on Free Info Card



Halland Broadcast, a division of **Henry Engineering**, has created two new software packages, **HitPick** and **HitDrive**, that will allow you to create a custom music format, which will then be instantly pre-loaded on a computer hard drive or on an optical disc. The automated file server system can transfer numerous songs to the user in only a few hours. Halland has its entire music inventory available in either Dolby AC-2 or MPEG files. All files are recorded using a 48k sample rate with 6:1 data reduction for audio quality.

**Hal and Broadcast Services, 1289 E. Alosta Ave., Glendora,
CA 91740; 813-963-6300; fax 818-963-2070**

Circle (1261) on Free Info Card

At this year's NAB, **LPB** will debut the **Airshow2000** TV spot automation system. The system features multiple channels and digital broadcast quality video. Also from **LPB** is a new studio monitor line from **Hayes, Australia**.

**LPB Inc., 28 Bacton Hill
Rd., Frazer, PA 19355;
610-644-1123;
lpbsales@lpbinc.com**

Circle (1262) on Free Info Card

**JIM LODES
EDITOR, TBC VIDEO PRODUCTIONS,
OVERLAND PARK, KS**

What's going to be hot at NAB 97:
Windows NT-based software, nonlinear editing

What's not going to be hot at NAB 97 that has been in the past:
VC Pro and Digital S

What I'll be looking for at NAB 97:
Backup storage for not for large hard drives, more about non-linear video editing

What I'll be checking out for an imminent purchase:
Same as above.

Changes I'd like to see made at NAB 97:
Put the convention halls within walking distance, or at least more buses.

My tips for first-time attendees:
Wear soft, comfortable shoes. Use the first day to locate where you need to go.

My view of the industry:
The video industry should settle down and quit creating new formats.



SNEAK PEEKS



Evolving Video Technologies introduces AnterO2, a high-performance character and graphics-generation product that runs exclusively on the Silicon Graphics O2 workstation. AnterO2 was created to combine the power of Silicon Graphics with features like color and font palettes; unlimited font sizing; international language support and out-of-box networking.

Evolving Video Technologies, 7850 Vance

**Dr., Ste. 210, Arvada, CO 80003;
303-456-1450; fax 303-456-1434;
antero@evt.com; www.evt.com**

Circle (1263) on Free Info Card



Graseby Optronics announced that its SLS 9400 color analyzer is now compatible with the new SONY broadcast monitors. The SLS 9400 can make accurate color and luminance measurements across the full color gamut of a typical color CRT. This capability was instated due to an increase in demand for CRT displays and a need to accurately adjust and control the color on displays during manufacturing and service.

**Graseby Optronics, 12151
Research Pkwy, Orlando, FL 32826;
407-282-1408; fax 407-273-9046**

Circle (1264) on Free Info Card



Watch for Folsom Research's latest scan converter, the Model 9700XL, at this year's NAB. The Model 9700XL can convert high-resolution computers or imaging sources to broadcast-quality video output. It includes RS-232 control, pan and zoom, multiple flicker elimination filters and conversion to all major video formats.

**Folsom Research, 526 E. Bidwell St., Folsom, CA
95630; 916-983-1500; fax 916-983-7236**

Circle (1266) on Free Info Card

Harmonic Lightwaves, which has been known primarily as a fiber-optic system provider for broadband communications, will be moving into the digital arena. The company announced that it is expanding its product offerings with solutions for the broadband digital communications market. Harmonic will introduce a new line of digital products for the head-end level of cable TV networks which will enable the convergence of television, cable and the Internet to provide user applications. Harmonic's traditional fiber-optic transmission products will remain key components in cable systems.

**Harmonic Lightwaves, 549 Baltic Way, Sunnyvale, CA 94089; 408-542-
2500; fax 408-542-2510; info@harmonic-lightwaves.com**

Circle (1265) on Free Info Card

BETACAM SX

SNEAK PEEKS



At the top of the ST series of transmitters by **Global Microwave Systems** is the new 10W microwave transmitter, the STS-10000. It combines all of the field-proven features found in the ST series with a high-powered RF amplifier. The STS-10000 typically comes delivered with 90% pre-programmed channels and features dual audio subcarriers.

**Global Microwave Systems, 4141
Avenida De La Plata, Oceanside, CA
92056; 619-631-8021; fax 619-631-
8031; GMS@gmsinc.com;
www.gmsinc.com**

Circle (1267) on Free Info Card



Doremi Labs has made available a new random-access disk video recorder, the V1d, featuring serial digital interface. The V1d records field accurate compressed video with two audio tracks and time code. The recorder offers full-screen NTSC and PAL, as well as full front-panel controls.

Doremi also introduces the V1b, a random-access disk video recorder designed as a "drop in" replacement for analog VTRs. It records field accurate compressed video at full resolution, with two audio tracks and time code.

**Doremi Labs, 3631 Cahuenga Blvd. West,
Los Angeles, CA 90068; 213-874-3411;
fax 213-874-3401**

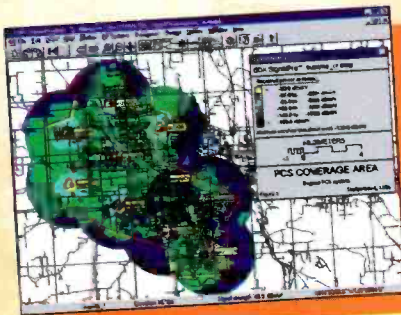
Circle (1268) on Free Info Card



The Symmetrix Network Media Storage (SNMS) video and multimedia server from **EMC Corporation** stores and streams video files in multiple formats and compression standards. Applications include broadcast television and systems can be used as a carrier-based or user-site repository. This DVB-compliant system provides unmatched capacity, bandwidth and scalability.

**EMC, Hopkinton, MA 01748; 508-435-1000; fax
508-497-8003; www.emc.com**

Circle (1269) on Free Info Card



From **EDX Engineering**, look for the EDX SignalPro for Windows 95/NT. This comprehensive tool for PCS, cellular and other wireless communication series, uses the most advanced propagation models to perform coverage, interference and detailed link analysis studies.

Another product from EDX is the PCS/cellular system design module. With this software, users can automatically lay out a hexagon grid of base stations to achieve service objectives and assign frequencies with standard reuse patterns.

Also from EDX is the Microcell 3-D Ray-Tracing module. This software provides ray-tracing models which consider physical characteristics to help find reliable locations for building walls and corners.

**EDX Engineering, P.O. Box 1547, Eugene, OR 97440;
541-345-0019; fax 541-345-8145**

Circle (1270) on Free Info Card



As part of its SR series, **DOD** is introducing the Constant Q equalizers: the SR430Q, SR431Q and SR831Q. The SR430Q is a 1U, dual-channel 15-band, $2/3$ rd octave; the SR431Q is a 1U, mono 31-band, $1/3$ rd octave; and the SR831Q is a 2U mono, 31-band, $1/3$ rd octave. The new EQs use low-noise potentiometers to offer up to 12dB of boost or cut per band, and are equipped with balanced XLR and unbalanced $1/4$ -inch connectors. The DOD SR Series equalizers feature total harmonic distortion, typically less than 0.004% at 1kHz and a signal-to-noise ratio of 106dB.

**DOD Electronics Corporation, 8760 S. Sandy Pkwy., Sandy, UT
84070; 801-566-8800; fax 801-566-7005**

Circle (1271) on Free Info Card

After you buy this year's hottest new equipment, you're going to need to connect it.

And after you've made the investment to be the best of the best, you're going to insist on quality cabling.

At Clark, quality is our number one concern, along with stocking the products you need. All standard cables and accessories are on hand, including a wide range of Composite Cables to eliminate multiple cable runs. And we specialize in digital products - like audio and video digital cabling, complete digital assemblies and digital patchbay systems.

And when you need more than the standard product, the Clark Custom Cable Shop is ready to provide custom cable assemblies that meet your exacting standards and your exact needs.

When it comes to cable, we get you connected. Call us at 1-800-CABLE-IT. See Us At NAB'97 Booth #7871.



Quality products for quality customers

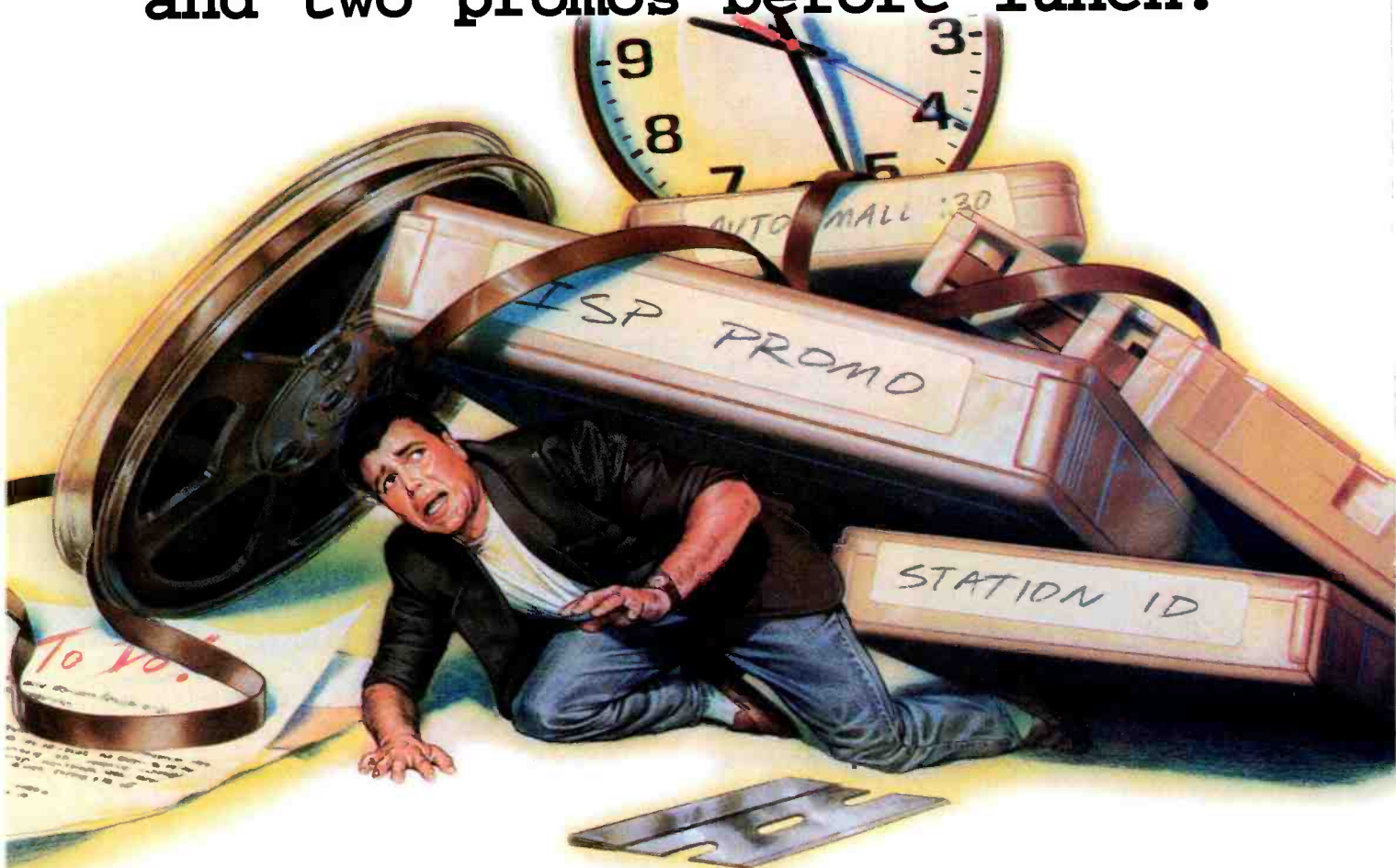
(800) 222-5348 • Fax: (847) 949-9595

email: sales@clarkwc.com

www.clarkwc.com

Circle (59) on Free Info Card

It's 9:30 am. You've got to edit
nine phone-ins, cut a dozen
spots, record four station I.D.s
and two promos before lunch.



Shortcut™ is 360 Systems' new editor

SO LET US SHOW YOU A SHORTCUT

right the first time. That's why Shortcut

for people in a hurry. It's powerful enough for production yet easy enough to use on-air. Shortcut delivers massive storage, scrub editing, a bright waveform display, and even built-in speakers. All this in a compact self-contained package with the muscle to handle your toughest assignments. We know you need to move fast, and get it

gives you real buttons for direct access to editing commands. No need for computers, monitors, or mice. Shortcut is complete and ready to go for just \$2,995. So if you have too much work and too little time, just take a Shortcut. Call (818) 991-0360 today.



Shortcut
PERSONAL AUDIO EDITOR™

360 Systems
PROFESSIONAL DIGITAL AUDIO



If you're a call-letter station, you can try Shortcut for 10 days with no obligation. If you decide to buy it, we'll arrange your purchase through one of our authorized dealers. Call (818) 991-0360 or fax (818) 991-1360 today.

e-mail: info@360systems.com • web: www.360systems.com

Test offer good in the continental US and Canada only. Test offer expires March 31, 1997. 360 Systems and Shortcut are registered trademarks of 360 Systems. ©1996 360 Systems

Circle (60) on Free Info Card
www.americanradiohistory.com

CONVERT COMPUTER GRAPHICS



TO VIDEO



RGB/Videolink® VIDEO SCAN CONVERTERS

Up to 1600 x 1280 pixel input

Analog output / NTSC, PAL,
S-Video, CAV

Digital output / CCIR 601

Flicker filter

Autosync

Video overlay

Pan & zoom

Simple external connections



SPECTRUM®

A visual communications company™

950 Marina Village Parkway
Alameda, CA 94501

Tel: (510) 814-7000

Fax: (510) 814-7026

E-mail: sales@rgb.com

http://www.rgb.com

Circle (61) on Free Info Card

SNEAK PEEKS

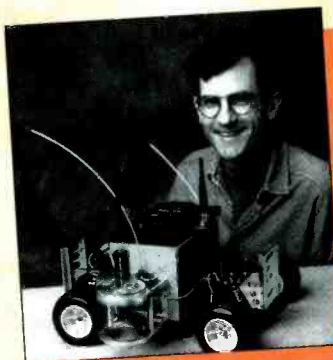


The Clay Studio is **Digimation's** newest metaballs modeling and animation tool. Rather than working with standard primitives, the Clay Studio allows the user to work with clay spheres which interact the same way as liquid mercury might.

Also new from Digimation are the following products: **Lightning**, an animator which simulates lightning and other electrical effects; the **Atomizer**, a MAX Space Warp that expands the capabilities of the MAX particle systems; the **Texture Lab: Elemental Tools**, a collection of procedural mapping types; the **Glider**, a MAX Space Warp that constrains the movement of MAX geometry, lights, cameras and other space warps, to the surface topology of any other MAX object; **Hair/Fur**, a MAX plug-in that simulates hair or fur; **Bones Pro MAX**, a skeletal deformation tool; and representing the next-generation particle system for MAX is the **Sand Blaster**.

**Digimation, 150 James Dr. East, Ste. 140,
St. Rose, LA 70087; 504-468-7898;
fax 504-468-5494; 72320,2042;
www.digimation.com**

Circle (1274) on Free Info Card



Soon it will be easier to record high-speed, low-angle action with the introduction of **Innovision's** Radcam camera car. The Radcam has designs similar to a full-camera car, including the ability to position the camera on any side of the vehicle, however the lens can be as low as one inch off the ground and as high as 15 inches. Manipulated by a radio controller, the speed of the wireless camera car can be adjusted, as well as the pan and tilt of the camera. The Radcam comes in both NTSC and PAL versions.

**Innovision Optics, 1438 Ninth St., Santa Monica,
CA 90401; 310-394-5510; fax 310-395-2941;
103070.3211@compuserve.com**

Circle (1276) on Free Info Card

Hammer, a brand of **StreamLogic**, has added high-capacity drives to the HammerDAT, Hammer, Sledgehammer® Pro families of drives, as well as adding the faster reading Hammer solutions flexibility along with the ability to back up. Hammer has several products based on the largest single disk available, packing nearly 22GB on one 5 1/4-inch drive.

Hammer, 1555 Adams Dr., Menlo Park, CA 94025; 415-325-4393; fax 415-833-4653

Circle (1277) on Free Info Card

P.E. Photron is launching the PSEUDIO virtual studio system that is based on a totally different concept from other virtual studio configurations. A conventional virtual studio system renders the pre-modeled background imagery, in real time, on a high-end graphics workstation in conjunction with the movement of the studio camera. With the PSEUDIO system, the background images are pre-modeled and rendered and then stored in a D1-quality, digital disk array or frame-buffer. These images are then read out from the disk in real time in conjunction with the movement of the studio camera.

**P.E. Photron, 4030 Moorpark Ave., Ste.
108, San Jose, CA 95117; 408-261-3613;
fax 408-261-3628**

Circle (1272) on Free Info Card

From **Kramer Electronics'** goal to develop and manufacture high-quality video equipment, comes the Video Tester. This pocket-sized video signal tester eliminates the need to carry an oscilloscope, vectorscope or waveform monitor to trace and rectify bad video connections, cable breaks or faulty sources that can destroy a video signal. The device is battery-operated and comes in a small enclosure with a pocket clip.

Kramer also plans to introduce some of its other new products, including the series of digital distribution amplifiers and switchers, the VM-3 distribution amps and the AD-5N 1:5 amp.

**Kramer Electronics, 350 Main Rd.,
Montville, NJ 07045; 888-303-5600**

Circle (1273) on Free Info Card

New from **Digimedia** is B.ES.T, its version of an alternative to scenography. Designed to simulate virtual scenery in real time. B.ES.T operates using any commercial 3-D modeling software. The sensorized cameras follow the actor in the studio, and are able to tilt, zoom and pan. Any object in the simulation can be displaced, rotated, morphed, faded, dissolved or scaled.

**Digimedia, S.A., C/Gomera, 12 - 28700
S.S. De Los Reyes (Madrid); +34-1-663-
72-27 (ext. -207-208); fax +34-1-651-96-
13; digimedia@mad.servicom.es**

Circle (1275) on Free Info Card



Set It And Forget It.

MEET THE SHURE FP410, THE "HANDS OFF" MIXER THAT DELIVERS PERFECT SOUND AUTOMATICALLY. The Shure FP410 is not just another pretty face. It's a hard working portable mixer that forever solves the nagging problems of multiple open microphones. By automatically keeping unused microphones turned down, the FP410 dramatically improves your audio quality.



The secret: Shure IntelliMix® — the patented operational concept behind the revolutionary FP410. It thoroughly shatters existing standards for portable mixer performance and ease of operation.

Just set your levels and flip the switch to "Automatic." Shure IntelliMix does the rest.

♦ Its Noise Adaptive Threshold activates microphones for speech but not for constant room noise, such as air conditioning.

♦ Its MaxBus keeps the number of activated

microphones equal to the number of talkers. ♦ And its Last Mic Lock-On keeps the most recently activated microphone open until a newly activated microphone takes its place.

With Shure IntelliMix, you'll get a "seamless" mix that's as close to perfect as you'll find. Providing the cleanest, clearest sound you've ever heard from a portable mixer. And freeing you from the tedious task of turning microphones on and off.

For a closer look at the world's most efficient portable automatic mixer, call for more information, including the article

"Why Use An Automatic Mixer?"

We think you'll agree: The Shure FP410 is automatically a classic.

Call 1-800-25-SHURE. The Sound Of Professionals...Worldwide.™

SHURE®

Power, performance, choice
you win in every category.

When it comes to selecting the right combination of power and performance for your UHF TV transmitter, nobody gives you a greater choice than Thomson Tubes Electroniques. Our Diacrode® range (TH 610 and TH 680) takes tetrode performance to new heights, offering peak output power from 10 to 80 kW. Advanced features include minimum RF losses in the tube.

The TH 760, featuring optimised IOT design and patented Pyrobloc® grid technology, meets your power needs in common and vision-only amplification from 40 to 60 kW, respectively. Our UHF tetrodes range from 1.1 to an impressive 44 kW, their high-efficiency design makes them true leaders in energy and cost savings. What's more, all the tubes have been qualified for tomorrow's digital broadcast standards.

THE POWER OF CHOICE

THE CHOICE

As part of our comprehensive approach to increasing your broadcast performance, we also design and manufacture fully matched cavities for each of our tubes. Of course when you choose our tubes, you get more than just outstanding product performance and lifetime... you get the service, support and innovation of a global leader in UHF tube technology.

Wherever you are, our engineers and technicians are at your service to help you select, install and maintain the tubes you operate in your transmitters.

And you benefit from rapid, continuous access to the spares you need.

Want real choice in today's most advanced UHF power grid tubes?

Make the right choice: Thomson Tubes Electroniques

THOMSON TUBES ELECTRONIQUES

18, avenue du Maréchal Juin
92366 Meudon-la-Forêt cedex - FRANCE
Tel: 33 (0) 1 30 70 35 00 - Fax: 33 (0) 1 30 70 35 35

***Visit us at NAB '97,
Booth # 5751, Main Hall***



CE OF POWER

Circle (73) on Free Info Card

www.americanradiohistory.com

COMPREHENSIVE CASE SELECTION

Free detailed catalog offers the industry's largest off-the-shelf selection of cases for immediate delivery. Models for virtually every service-related application are designed to carry, store, protect and ship tools, instruments, laptop and notebook computers, sensitive and expensive equipment, trade show displays and more.



Pick from reusable shipping containers, watertight instrument cases and soft-sided carry-alls. Features include telescoping handles, recessed rubber wheels and hardware plus foam-filled or foam-lined versions.



Specialized Products
C O M P A N Y

Telephone (800) 866-5353
FAX (800) 234-8286

Circle (74) on Free Info Card
See us at NAB Booths #13654-3655

SNEAK PEEKS



The SideKick accessory control from **Niche Inc.** elevates the Alladin and GeniePlus DVE systems from Pinnacle Systems into the truly professional and broadcast production environment. SideKick is a functional extension to the visual user interface, providing full control over the system. Effects may be modified or reviewed quickly on your system with all the speed and ease traditional digital effects systems have enjoyed for many years. SideKick is a user-friendly control panel dedicated to the creation and manipulation of effects.

Niche will also be showing Jasmine, a multifunction, real-time, freeform, full-color anti-aliased CG/graphics software package.

Niche, 4455 S. Jill's Place, West Valley City, UT 84120;
801-963-1991; fax 810-963-1803; nicheinc@ix.netcom.com;
www.nicheinc.com

Circle (1278) on Free Info Card



The most recent addition to the Intelligent Power Controller series from **Pulizzi Engineering Inc.** is the IPC 3300 series. The introduction of this series puts AC power, as well as Form "C" dry contact closures, at your fingertips. Each port is individually controlled by the user, either locally with push-button switches or

at unattended remote locations via an RS-232 communications port, or for those needing high-speed data transfer via the RS-485 port connected to a modem/computer terminal. You can control 36 IPCs up to 4,000 feet controlling 278 devices, or the IPC can be stacked up to nine units high at the same address controlling 72 devices. Some of the other products from Pulizzi Engineering are the LA1653 satellite antenna lightning arrester, the TPC 12S-A/MTD and TPC 11S-10/MTD power controllers, the RCP 2242 and the TPC 4000.

Pulizzi Engineering Inc., 3260 S. Susan St., Santa Ana, CA 92704;
714-540-4229; fax 714-641-9062

Circle (1279) on Free Info Card

Promusic has added three new sound-effects collections from the Sonic Boon Digital Sound Effects including *The Works: Sounds of Motion, Action & Force*; *Dynamic Range* — *The Best Guns Anywhere!* and *Foley Footsteps Sound Effects Library*.

In addition, Promusic is the exclusive U.S. agent for the Primrose Production Music Library which offers nearly 100 CDs of varied music from contemporary rock, folk and jazz to music of the Renaissance and Middle Ages. It also offers popular classics from the masters and CDs of jingles, links and broadcast-friendly elements.

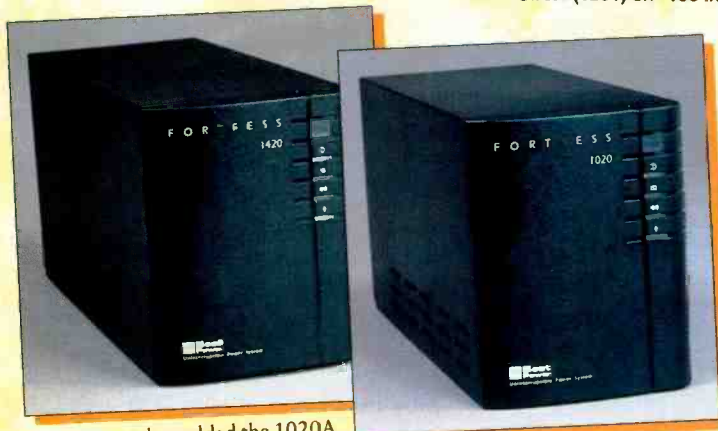
Promusic, 941-A Clint Moore Rd., Boca Raton, FL 33487; 800-322-7879; 407-995-8434;
promuse@aol.com; www.Promusic-inc.com

Circle (1280) on Free Info Card

Photoflex, Inc. is introducing the Primatte S-100 by P.E. Photron. This highly regarded chromakey and image compositing application is now available for the Windows and Macintosh platforms as a plug-in for the Adobe Photoshop version 3.0 product. Primatte S-100 for Photoshop offers a revolutionary solution for the ultra-precision matte-control bluescreen compositing.

Photoflex, 333 Encinal St., Santa Cruz, CA 95060; 800-486-2647 or 408-454-9100; fax 408-454-9600;
company@photoflex.com

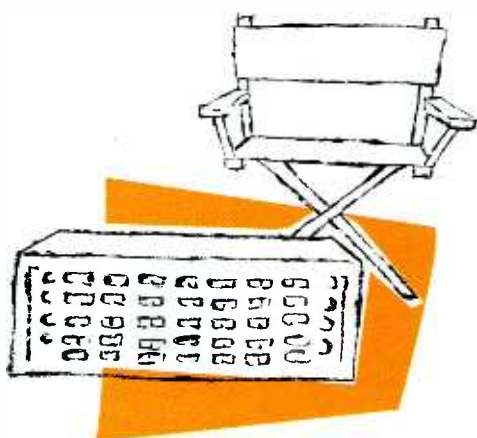
Circle (1281) on Free Info Card



Best Power has added the 1020A and 1420A models to its next-generation Fortess uninterruptible power systems. These UPSs provide no-break sinewave output; a comprehensive suite of free, bundled power management software and a wider range of power ratings and footprints. In addition, the new Fortess models offers many other features.

Best Power, P.O. Box 280, Necedah, WI 54646; 608-565-7203;
fax 608-565-2221

Circle (1282) on Free Info Card



Trans*gig*uration

Case Study 1: Silicon Graphics Entertainment Center

GigWorks™ Fibre Channel network products from Ancor can be a transformational experience. Silicon Graphics Entertainment Center uses GigWorks switches, adapters and routers as part of their network solution to maximize the creative power of their machines - and achieve networking nirvana.

GigWorks products are available for popular Silicon Graphics models including the new O2™ series. They

also interoperate with all popular platforms and protocols, and handle video, voice and data on a common network. And, they're backed by an ANSI standard that's already been specified to a mind-bending 4 gigs.

To move your network to a higher plane call the GigWorks gurus at 1-800-342-7379, or download the works at www.ancor.com. Then make the world's fastest networks a truly easy gig.



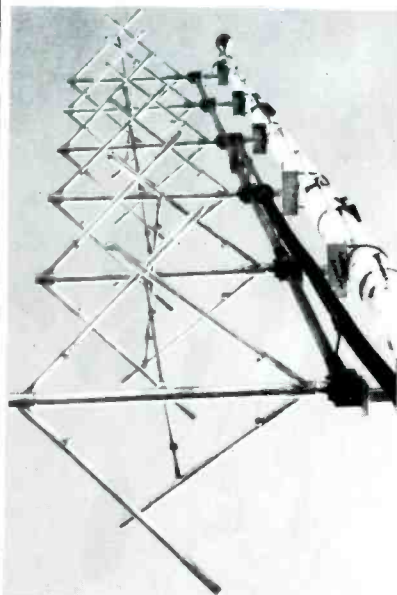
GigWorks™, ANCOR™ and the Ancor logo are the marks and property of Ancor Communications, Inc. Silicon Graphics and O2 are trademarks of Silicon Graphics, Inc. To learn more about the Silicon Graphics Entertainment Center contact Ancor or your local Silicon Graphics dealer.

Circle (75) on Free Info Card

www.americanradiohistory.com

**The Question Is:
WHAT'S NEW?**

**The Answer Is:
ULTRA TRACKER!**



RFR/RFI troubles?

*Multipath driving your
listeners crazy? (or driving
them away)?*

*The neighbors complaining
about your signal walking all
over everything else?*

*Need better coverage of your
market?*

**No Problem!! The ULTRA
TRACKER is here!**



IEEE As presented at the IEEE 46th Annual
Broadcast Symposium Sept. 1996.



ANTENNA CONCEPTS, INC.

6601C Merchandise Way
Diamond Springs, California 95619
916-621-2015 ▲ Fax: 916-622-3274

Circle (76) on Free Info Card
See us at NAB Booth #8672



Andataco will be offering demonstrations of its GigaRAID storage systems, a new family of storage enclosures. Featuring a modular architecture comprised of user-replaceable building blocks, the system is 100% CPU and operating system independent. It is scalar from desktop to data center and supports a complete hierarchy of 3.5- and 5.25-inch storage devices, including solid-state disk, magnetic disk, optical, tape and controllers.

**Andataco, 10140 Mesa Rim Rd., San
Diego, CA 92121; 619-453-9191;
inquire@andataco.com;
www.andataco.com**

Circle (1284) on Free Info Card

Another addition has been made to **Akai's** growing family of compatible recorders/editors. The newest product to join the ranks is the DD8 digital disk recorder. Designed as a random-access digital audio dubber that offers plug-and-play replacement of DA-88s, features include an onboard 2.0GB hard drive or an optional 2.6GB magneto-optical drive that provides instant removability on reliable media and data compatibility with the Akai DD1500 recorder/editor. The unit has eight expansion slots that can accommodate a wide variety of available options.

**Akai, 1316 E. Lancaster Ave., Fort Worth, TX 76102; 817-336-5114; fax 817-870-1271;
akaiusa@ix.netcom.com; www.akai.com/akaipro**

Circle (1286) on Free Info Card

Driving the next breakthrough in desktop digital video editing, **miro Computer products AG** has announced the miroVIDEO DV 100, an IEEE 1394 (FireWire) solution for digital video editing systems that bridges the technology gap between digital camcorders and desktop computers. The miroVIDEO DC 100 is compatible with the Sony's DCR-VX1000 Digital Handyman and DCR-VX700 Digital Handyman, and is software upgradeable for future DV equipment.

**miro, 955 Commercial St., Palo Alto, CA 94303; 800-474-6476; fax 415-855-9004;
info@mirousa.com; www.miro.com**

Circle (1408) on Free Info Card



ProSource is showcasing the first broadcast video matte box system especially developed for the rigors of hard news ENG and the multifaceted demands of on-location EFP. The SHADE FX is designed with future technology in mind and works with all existing internal focus lenses up to 5.2mm, including 4:3 and 16:9 aspect ratios. The QL mounting system, with a selected insert adapter ring, attaches directly to the front lens barrel. Two filter compartments, which accommodate 4X4, 4.5X4.5 or 4X5.6 filters (glass/resin), simultaneously rotate 360°.

**ProSource, 1515 Black Rock Turnpike, Fairfield, CT
06430; 203-335-2000; fax 203-335-3005**

Circle (1288) on Free Info Card

Many new microphones can be found at the **beyerdynamic** booth, such as the MCD 100 digital condenser studio microphone. Preamplification and A/D conversion of the microphone signal, which was previously achieved at the input of a digital console is now accomplished directly behind the microphone capsule of the MCD 100, therefore providing an AES/EBU signal at the output of the microphone.

Other beyerdynamic products include the MCE 82 stereo condenser microphone, the MCE 84 condenser microphone, the DT 250 studio monitoring headphone, the MCE 7 ultrasmall microphone and a new range of hand-held transmitters.

**beyerdynamic, 56 Central Ave.,
Farmingdale, NY 11735; 800-293-4463 or
516-293-3200; fax 516-293-3288**

Circle (1283) on Free Info Card

Artel's VISTA net application bridges the gap between analog and digital by providing transmission, switching, access and control technology. TV loop providers now have the ability to switch both analog and digital circuits on the same platform. In addition, the application can be expanded to multiple switching centers controlled by the same master controller. End users can arrange remote programming with predefined limits and the Artel solution is future-proof with respect to digital migration.

**Artel, 237 Cedar Hill St., Marlborough, MA
01752; 508-303-8200; fax 508-303-8197;
www.artel.com**

Circle (1285) on Free Info Card



Our Routing Switchers Never Call in Sick ...



**Routing Switchers have to deliver everyday, all the time.
It's that simple.**

Datatek has been supplying teleproduction facilities with the most reliable family of Routing Switcher Systems since 1970. All Datatek Routing Switcher Systems feature:

- Total upgradeability
- Support for all signal formats
- Same frame mixing of analog and digital formats
- Full compatibility in mixed digital/analog facilities
- Fully modular architecture
- Advanced, comprehensive control system
- Same protocol, large & small routers

Every Datatek Routing Switcher is delivered with twenty-seven years of experience and a tradition of service.

For additional information contact
Datatek at 1121 Bristol Road,
Mountainside, NJ 07092
Tel: 908-654-8100
800-882-9100
Fax: 908-232-6381

See us at NAB Booth #8814

DATATEK
CORP

Circle (77) on Free Info Card

www.americanradiohistory.com

SANIX®

new concept
"Capacitive-Discharge"

800Hz PULSE GENERATION

BULK ERASERS

FAST
COMPACT
EFFICIENT
RELIABLY ERASE
METAL TAPES

All Models operate on 117V at 3 Amp.
24 hour continuous duty, no heat build-up.



3800

For BETA-CAM-SP,
Digital BETACAM, MII,
VHS, Beta etc.
1/2" w METAL-OXIDE

4800

For D2(D1) M,
BETACAM-SP,
Digital BETACAM,
U-matic, etc.
3/4" w 1/2" w
METAL-OXIDE



5500

For D2(D1), D3, D5
Large and M-S
3/4" w 1/2" w
all cassette
METAL-OXIDE
TABLE TOP MODEL



6000

For D2(D1), D3, DCT
Large and M-S
3/4" w 1/2" w
all cassette.
Up to 1" w 14" reel
all Reel Type
METAL-OXIDE
MASTER ERASER

REQUEST FULL-LINE CATALOG

U.S.A. DISTRIBUTOR
RTI-RESEARCH TECHNOLOGY INT'L.

4700 CHASE AVENUE
LINCOLNWOOD, IL 60646 U.S.A.

PHONE: 847-677-3000
FAX : 847-677-1311

SANIX CORPORATION
TOKYO, JAPAN FAX: 81-3-3702-9654

Circle (78) on Free Info Card

SNEAK PEEK



In addition to giving away a 1947 Indian Chief motorcycle, **Clark Wire & Cable** is showing several new products. The Bittree Patching Systems are high-quality systems specifically designed for broadcast, production and post-production applications. They are excellent for use in the high bit rate serial digital domain.

Other products include the Hannay portable/stackable reels, custom cable assemblies, a complete line of digital cables and remote composite cable and triax cables.

Clark, 1355 Armour Blvd., Mundelein, IL
60060; 800-222-5348 or 847-943-9544;
fax 847-949-9595

Circle (1289) on Free Info Card



BUF Technology has added a non-linear option to its popular slow-motion controller. The VTS-5000-NL is a modified version of the VTS-5000 and is optimized for use with non-linear recording devices. Cue points are recalled instantly for immediate slo-mo playback and new recordings are automatically placed at the end of previously saved segments. Preloaded segments, such as animated bumpers, are protected along with key highlights.

BUF Technology, 11835 Carmel Mountain Rd., #1304, San Diego, CA 92128;
619-451-1350; fax 619-451-6589

Circle (1290) on Free Info Card

The 900 series of professional, true-diversity UHF wireless systems is being exhibited by **Audio-Technica**. This series is available in two forms. The ATW-0951 UniPak System is comprised of an ATW-R09 receiver and an ATW-T51 body-pack transmitter with professional HRS connector and Hi-Z input. The ATW-0952 hand-held system, made up of the ATW-R09 receiver and ATW-T52 hand-held microphone/transmitter, uses an A-T Hi-ENERGY dynamic element with a neodymium magnet and double-dome diaphragm for smooth, accurate high frequency response.

Audio-Technica has also added the ATM87R and ATM89R to the Artist series microphones, and the Pro series has been expanded with the addition of VHF wireless and permanent install microphones.

Audio-Technica, 1221 Commerce Dr., Stow, OH 44224;
330-686-2600; fax 330-688-3752

Circle (1291) on Free Info Card



Crystal Computer Corporation has released its fully graphical user interface and real-time QNX monitor control system, CrystalVision 2000. It can provide your station with device and function screens, networking flexibility, redundancy options, editable script (Macro) files, and automated software protection with all the response time and speed you demand in real time.

Crystal Computer Corporation, 3280 McEver Rd., Buford, GA 30518; 770-932-0970;
fax 770-932-3577; www.sales@crystalcc.com

Circle (1292) on Free Info Card



dbx Professional Products is offering the first product in its new world-class Blue Series for the professional studio and sound reinforcement markets. Following in the tradition of the industry-standard 160, the 2U 160S signal path consists of a

high-precision input stage followed by the world's widest dynamic range voltage controlled amplifier, the dbx V8 VCA, and an output stage with precise phase alignment at all audio frequencies.

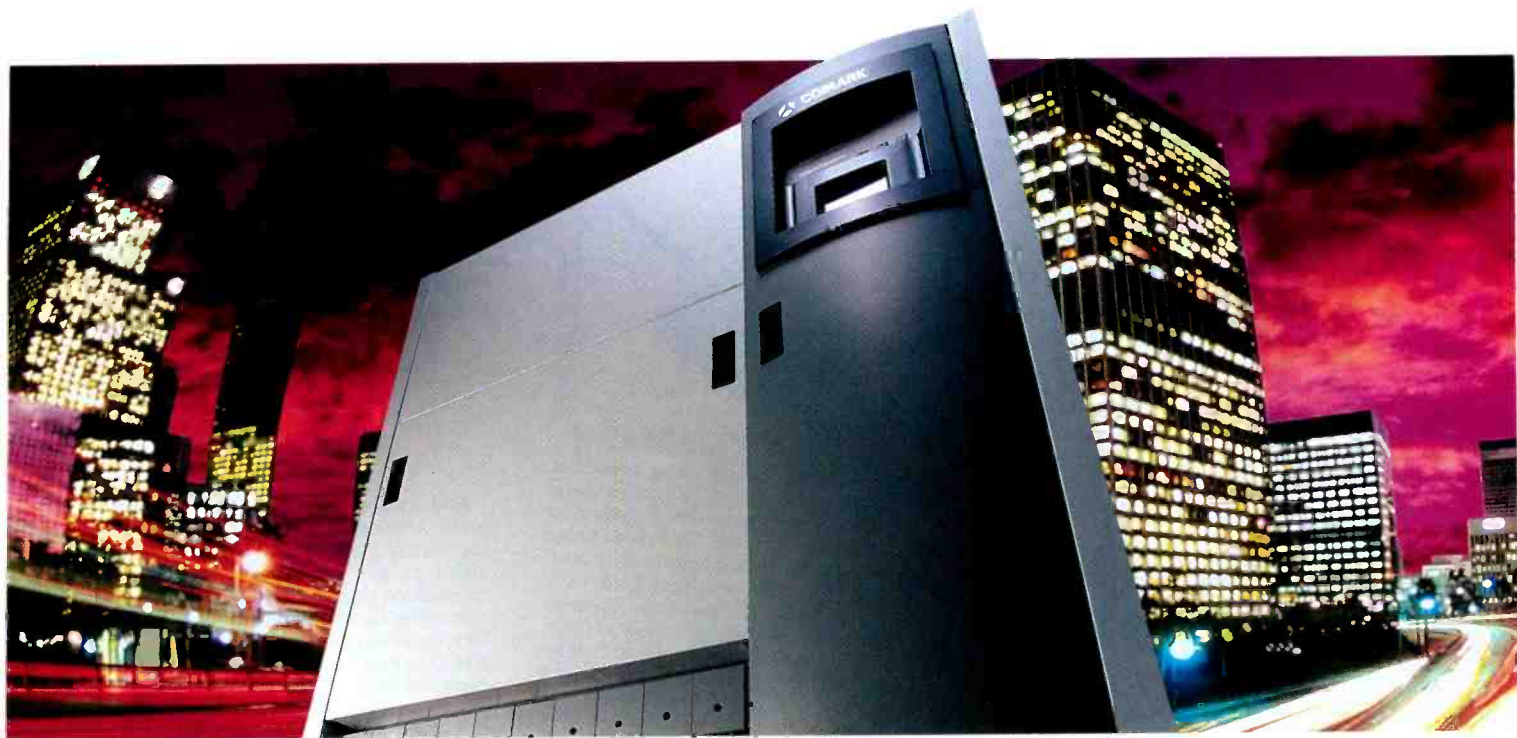
dbx is also introducing the DC66 stereo compressor, limiter and gate TDM plug-in, as well as an improved Project 1 286 microphone processor that is ideal for live and studio applications.

dbx, 8760 S. Sandy Prky., Sandy, UT 84070; 801-568-7660; fax 801-567-7662

Circle (1293) on Free Info Card

VHF for a new age.

Premiering
at NAB.
See us at
booth #7414.



Introducing Comark's Optimum line of VHF transmitters.

Comark, the television technology leader, has created a line of VHF transmitters that truly stand head and shoulders above the crowd.

- High efficiency
- Wideband
- Hot swappable
- User friendly

The new Optimum line was designed to take advantage of the latest advances in solid state technology, delivering the best in Low band and High band VHF performance from a single

wideband amplifier. It provides an ultra-friendly user interface. Fully compatible with all U.S. and world standards, including tomorrow's digital standards. Engineered for optimum efficiency, its design yields the smallest footprint on the market.



Its innovative high gain design eliminates the need for intermediate preamplification.

Designed for unsurpassed on-air reliability and redundancy, it offers the industry's best MTBF. Serviceability is enhanced by fully modular, hot-swappable amplifiers, power supplies and control units.

Here's more good news! Optimum is backed by Thomcast Worldwide Customer Service, providing fast, comprehensive around the clock support.



For more information, call us at (800) 688-3669. Or get more information at <http://www.comarkcom.com>. Join the new age in VHF. Make Comark your new partner.



500 Horizon Drive • Suite 503 • Chalfont, PA 18914
TEL: (215) 822-0777 • FAX: (215) 822-9129
www.comarkcom.com

© 1997 Comark Communications, Inc.

IMPORTANT FEATURES TO LOOK FOR WHEN LOOKING FOR A FILTER



When taking the shot, you need a filter that's optically as good as your lens, and made to take all the punishment you can dish out. So, don't settle for distorting "window" glass and aluminum rings that bind when the pace heats up. Trust only B+W filters to keep you out of a jam and picture-perfect. For a catalog or name and address of your nearest dealer, contact



Schneider Optics Inc.
285 Oser Avenue
Hauppauge
NY 11788 USA
TEL: 516 761-5000
FAX: 516 761-5090
email: tech@schneideroptics.com
http://www.schneideroptics.com

Circle (64) on Free Info Card

NEW LIFE FOR VIDEO BATTERIES



NEW! LOW COST BATTERY SUPPORT SYSTEM

The CASP®/1100 microprocessor-based battery support system is Christie's new, economy-minded answer to analyzing and charging ALL video batteries; and reconditioning even badly faded NiCads!

This preprogrammed, user-friendly system is designed for simplicity, high reliability and cost-effective performance, utilizing Christie's exclusive ReFLEX® charger. Features include: four channels for individual battery charging, analyzing and reconditioning; "results" indication on an LCD panel display; and totally unattended operation.

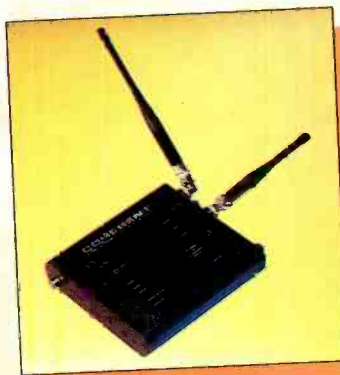
Call your dealer for all the details.

CHRISTIE®
Since 1929

18120 S. Broadway, Gardena, CA 90248
Phone (310) 715-1402, FAX (310) 618-8368
E-mail: sales@christiecorp.com
WWW: http://www.christiecorp.com

Circle (63) on Free Info Card
See Christie at NAB Booth #6511

SNEAK PEEKS



Coherent will be showing its full line of remote viewing/ENG video/audio transmitters and receivers, including the deck-of-card-sized CVT-500 video transmitter. Diversity reception is available with the new model CVR-1500 receiver (photo). This technique yields much improved reception and far fewer picture dropouts. A microprocessor selects the strongest signal from up to three different antennas to send to the extremely low noise (1.5dB) triple front end.

**Coherent, 28245 Ave. Crocker
Suite 200, Valencia, CA 91355;
805-295-0300; fax 805-295-0090**

Circle (1295) on Free Info Card



and YUV outputs, gen-lock support, true multiscanning over a wide input range, dual computer inputs and variable sizing and positioning.

**Communications Specialties, 89A Cabot Ct., Hauppauge, NY 11788; 516-273-0404;
fax 516-273-1638; www.commspecial.com**

Circle (1297) on Free Info Card

Now on the market is a high-speed 8x8 digital crosspoint switch from **National Semiconductor Corporation's Comlinear Products Group**. Designed for serial digital video systems and telecom/datacom switching, the CLC018 meets worldwide standards for serial data transmission, including SMPTE 259M. It has 18 fully differential signal paths and delivers data rates up to 1.4Gbps (Non Return to Zero) per channel with less than 100pspp jitter.

**National Semiconductor, 4800 Wheaton Dr.,
Fort Collins, CO 80525; 800-272-9959;
www.national.com**

Circle (1298) on Free Info Card



Recently moving into the North American market, **elocab Tailor-Made Cables** produces a product line that begins where standard cables end. Nothing is off-the-shelf. Each and every cable is designed and manufactured to your precise needs and specifications. A tailor-made cable can be designed, manufactured and delivered in 3-6 weeks in quantities as small as 300 feet.

**elocab, 258 McBryne Dr., Kitchener,
Ontario, Canada N2R 1H8; 519-893-1155;
fax 519-893-2766**

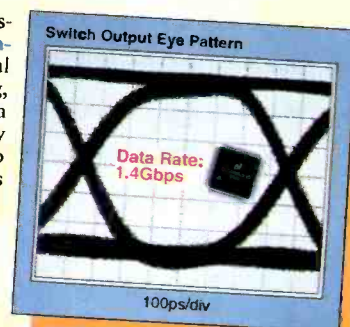
Circle (1294) on Free Info Card

Adirondack Software has announced the availability of release 4.2 of its Multi-Event Scheduling System package that provides for greater efficiency and productivity. The new release expands on the functionality of the earlier version, offering a smoother graphical user interface, the ability to handle an increased number of employee types, improved inquiry, reporting features and more.

**Adirondack Software, 20 Baltusrol Dr.,
Clifton Park, NY 12065;
phone/fax 518-877-8002**

Circle (1296) on Free Info Card

Communications Specialties has a combination computer workstation-to-video scan converter and down converter. With broadcast-quality NTSC/PAL outputs, VGA, SVGA and Mac compatible down-converter outputs, the Scan Do Ultra unit stands one rack unit high. Among its many features are composite, S-Video, RGB





RT-SET

LARUS™ and OTUS™ Virtual Studio Systems



Why RT-SET?

 We wanted to have the best solution of the virtual studio sets that is possible and we decided for RT-SET."





Markus Schönmann, Director of Marketing, SZM Sendezentrum München

"RT-SET was the only company that I found that actually created, produced and delivered..."





Eytan Keller, Executive Producer/Director, "Secrets of the Cryptkeeper's Haunted House"



Our features:

-  Free-D prompter guide for talent
-  Enhanced lighting capabilities
-  Out-of-focus and Depth of field
-  Shadows on real and graphical objects
- ...and more...

Our capabilities:

-  Elections Coverage
-  Commercial Productions and Advertisements
-  Children's Entertainment Programs
-  Network Television Series
- ...and anything else you can dream of...

Call us:

RT-SET Ltd.

Shefayim Post

P.O.B 48, Shefayim 60990, Israel

Tel: +972-9-9552236, Fax: +972-9-9552239

RT-SET America Inc.

2230 Martin Avenue

Santa Clara, California 95050, USA

Tel: 408-988-2330, Fax: 408-986-0452

Internet: <http://www.rtset.co.il>

Come See Us
at **NAB '97**
Chyron / RT-SET
Booth# 11501
(LVCC)



where creativity leads technology

©1997 by RT-SET Ltd. Sadma/graphic design



DTV is here and DIELECTRIC is ready with...

- ♦ DTV antennas
- ♦ DTV filters
- ♦ DTV combiners
- ♦ DTV transmission line
- ♦ DTV waveguide **NEW**
- ♦ DTV feasibility studies

*Stop by our Booth # 7976
at NAB and let us help you
prepare for your digital future and...*

DIELECTRIC

Tower Road • Raymond, ME 04071
(207) 655-4555 • Fax (207) 655-7120
email • dielectric@maine.com
www.dielectric.com

Register to
WIN a
BOSE Wave® Radio

Circle (66) on Free Info Card

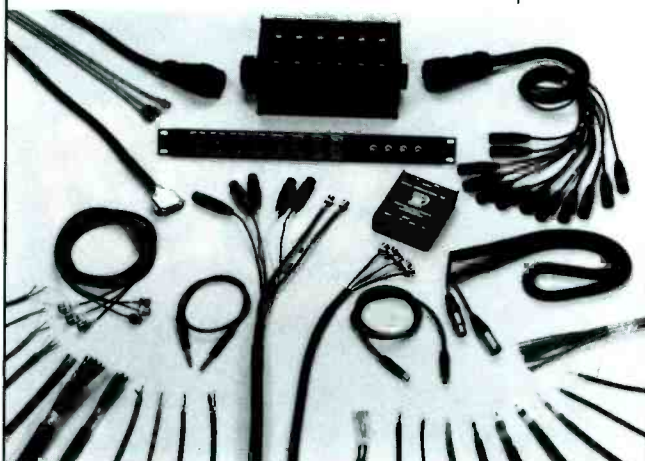


Nucomm has developed the FT6/FR6 series of dual digital/analog STL microwave transmitters and receivers. These microwave links can handle analog video signals with up to six audio subcarriers, as well as being able to separately link FSK, QAM and QPSK digital signals up to 45MB. In the digital mode, the 70MHz digital signal is upconverted, transmitted, then down-converted at the receiver to 70MHz. The FT6/FR6 is available in bands from 1.3 to 15GHz in duplex, multiple channel simplex and hot-standby configurations.

**Nucomm, 101 Bilby Rd., Bldg. 1, Hackettstown,
NJ 07840; 908-852-3700; fax 908-813-0399**

Circle (1299) on Free Info Card

More Reasons to Choose Gepco



Cost-effective. Quality Crafted. Your choice of cable type, length and color from our extensive selection. Delivered to you on time. Gepco manufactures custom cable assemblies, audio and video snakes, breakout boxes, panels, patch bay wiring harnesses, direct boxes and prepackaged cable assemblies for point-of-sale display. All Gepco cable and custom products are made in the U.S.A.

We are authorized distributors for ADC, Kings, Neutrik, Switchcraft, EDAC and many more. Gepco stocks audio and video cable in bulk and will custom-cut to any length requirement for no extra charge.

1-800-966-0069

Ask your Gepco sales representative for a free catalog
Cable, Connectors and Custom Products

GEPCO INTERNATIONAL, INC. 2225 W. Hubbard, Chicago IL 60612
312-733-9555 Fax: 312-733-6416 TOLL-FREE: 1-800-966-0069



Circle (67) on Free Info Card

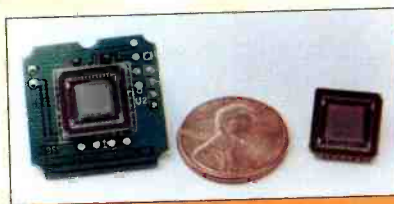
See us at NAB Booth #11984

New from **ECHOLab** are the 5000 switchers, the first family of digital video production switchers that run Windows NT. The three new 5000 models have full function control panels for live or post-production environments and offer an open architecture design. An integrated, built-in mini-server can run a huge variety of video devices from the leading companies that are embracing Microsoft's Windows NT.

**ECHOLab, 175 Bedford
St., Burlington, MA**

01803; 617-273-1512; fax 617-273-3275

Circle (1300) on Free Info Card



The Optical Systems Division of **Marshall Electronics** has introduced a breakthrough in low-cost camera technology. The V-X007 is a complete video camera on a chip. The CMOS chip outputs composite video conforming to EIA standards. It directly drives 75Ω devices such as TV monitors, VCRs and computer capture boards. The CMOS chip uses a single-voltage, low current supply.

**Marshall, P.O. Box 2027, Culver City, CA 90231; 310-390-6608;
fax 310-391-8926; Lmarsgo@ix.netcom.com**

Circle (1301) on Free Info Card

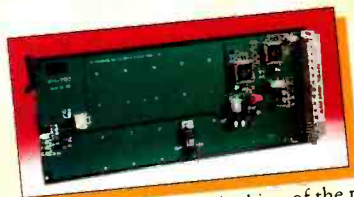
SNEAK PEEKS



Research Technology International (RTI) will be exhibiting its tape recycling and rejuvenation system for Betacam SP and digital Betacam. The TapeChek Pro Line 4100 cleans, evaluates and recycles videotape. Because the Pro Line 4100 will accommodate the standard and large sizes, all cassettes for EFP, ENG, LMS and productions VTR can be recycled in one unit. Accurate CCD line array detector scans the tape edge to edge to reliably locate edge damage, wrinkles and creases. The Pro Line 4100 also evaluates recorded tapes without affecting recorded material.

RTI, 4700 Chase, Lincolnwood, IL 60646;
800-323-7520 or 847-677-3000; fax 847-677-1311; Email@RTI-US.com

Circle (1302) on Free Info Card



Two new additions have been made by **Matthey Electronics** to its 3000 Series serial digital interconnect system. The SDA-3052 (photo) and the SDA-3054

are cost-effective distribution amplifiers for applications that require re-clocking of the received signal. Either unit will pass composite and component serial data rates. The received signal strength is monitored and indicates the approach of maximum automatic cable equalization and excessive cable lengths.

Matthey/Television Equipment Associates, P.O. Box 499,
South Salem, NY 10590; 914-763-8893; fax 914-763-9158

Circle (1303) on Free Info Card

PAG Ltd. has extended its range of Paglok batteries by incorporating its latest technology in new, sealed, maintenance-free packs. The PAG Digital SuperPacks provide an instant, accurate battery capacity read-out when used with the PAG battery reader conversion card, then allow a reasonably accurate assessment to be made of the time that a digital battery will run a piece of equipment.

PAG, 565 Kingston Rd.,
London SW20 8SA; +44 (0) 181-543 3131; fax +44 (0) 181-540 4797;

100750.1271@compuserve.com; www.pag.co.uk

Circle (1304) on Free Info Card



HOW HIGH WOULD YOU LIKE TO GO TODAY?

NEW!
35LC
CARBON
FIBER!

OConnor is proud to announce the new 35LC carbon fiber quick deployment tripod. This amazing tripod has a height range (at base of camera) from 35" to over seven feet high! Imagine being able to go from this... to this... in just seconds!

The 35LC features a pressurized air-assist column which can lift up to 40 pounds, and a built-in 100mm top casting with integrated tiedown.

The spreader has two mounting positions for added versatility.

OConnor's 35 series quick deployment tripods feature a quick release ring that allows adjustment of all three legs simultaneously on any terrain. See this incredibly versatile tripod at your OConnor dealer today.



oconnor
PROFESSIONAL CAMERA SUPPORT SYSTEMS
A division of Q-CO Industries, Inc.

100 Kalmus Drive, Costa Mesa, CA 92626
Tel (714) 979-3993 Fax (714) 957-8138
http://www.ocon.com sales@ocon.com



Circle (68) on Free Info Card

See us at NAB Booth #11044

SNEAK PEEKS



Acrodyne is announcing the highest power single tube UHF transmitter available anywhere for use with the Grand Alliance DTV input signal. The Au-DTV15, the Gold Series for DTV, is capable of producing 15kW average power output using a single Diacode device. The Diacode is a UHF high-power amplifying tube based on tetrode technology that was pioneered by Acrodyne.

Acrodyne, 516 Township Line Rd., Blue Bell, PA 19422; 800-523-2596; 215-542-7000; fax 215-540-5837

Circle (1305) on Free Info Card

The Sencore PC-based SV953 MPEG-2 Stream Station provides the complete test solution for testing and analyzing MPEG-2 digital video broadcast signals. This product gives you the capability to record, playout, monitor in real time and perform a complete analysis of the recorded transport streams that contain multiple video, audio and datastream information. It provides program and service providers with real-time monitoring of the datastream to ensure program materials meet all MPEG-2 and DVB standards.

Sencore, 3200 Sencore Dr., Sioux Falls, SD 57107; 800-736-2673 or 605-339-0100

Circle (1306) on Free Info Card



Scitex Digital Video will be offering a complete line of post-production and broadcast products, such as the Sphere DveousFX. With the addition of DveousFX for VideoSphere, SDV completes its integration into the world's leading DVE technology throughout the entire Sphere family of digital non-linear editing systems. DveousFX is available for the desktop-based MicroSphere and the VideoSphere and StrataSphere workstations. DveousFX delivers unprecedented effects power with Ultra Warp, 3-D light sourcing and Surface FX texturing.

Scitex, Court Square Bldg., 200 E. Lexington St., Suite 705, Baltimore, MD 21202; 410-783-0600; fax 410-783-0606

Circle (1307) on Free Info Card

**KENNETH HUNOLD
LABORATORY ENGINEER,
ABC TELEVISION,
NEW YORK, NY**

What's going to be hot at NAB 97:
Video and audio data compression, video and audio servers, MPEG test and measurement, HDTV products

What I'll be looking for at NAB 97:
HDTV system products, digital audio/video conversion and interface testing and other "new" technologies

The conference sessions I want to attend:
TV technology tutorials, digital TV studio production, signal and transmission issues, designing facilities, ENG/SNG digital quality, DTV allocation and policy issues

Where I recommend hanging out after hours:
Spend your time eating well and getting a good night's rest.

Changes I'd like to see made at NAB 97:
Either add days to the convention or limit attendance (neither of which is likely, of course). Also try to reduce the competition for time between sessions and exhibits. Longer exhibit hours and/or a more navigable (less crowded) exhibit floor would help.

My tips for first-time attendees:

Do your homework before arrival, marking a map with booths you have to visit. Yet be open for other things that might catch your eye while working the floor. After each of these, get right back to your map. (Don't stop in the middle of the aisle, please!) Review each day's findings that evening, while they're still fresh in your mind. Read all the literature you've collected, but only bring back home what you really need.



What's In Your Digital Future?

► **SYNCHRONIZER?**

For performance, features and value, broadcasters prefer DPS synchronizers. Like the 10-bit DPS-465 Serial Digital Synchronizer with D1, component, Y/C and composite video I/O. Or the versatile DPS MicroSYNC™ line of modular video and audio synchronizers. Systems from one to 32 channels are easy to configure and economical to expand. **From \$1,495**



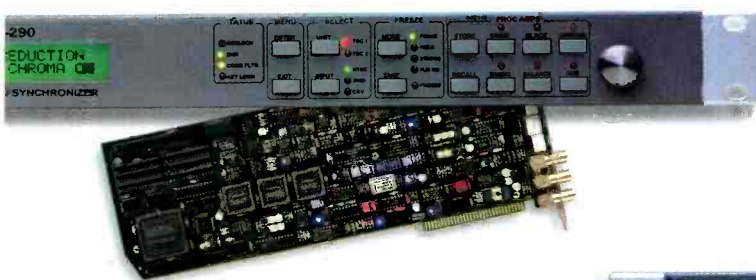
► **DIGITAL VIDEO RECORDER?**

Compressed or uncompressed—we've got you covered. For critical compositing and animation situations, DPS Hollywood™ provides the lowest cost per minute for 100% uncompressed D1 and component analog video. For non-linear editing and animation, our award-winning DPS Perception Video Recorder™ offers unsurpassed performance at a surprisingly affordable price. **From \$1,995**



► **TIME BASE CORRECTOR?**

Our first digital time base corrector, the DPS-1, was introduced over twenty years ago. Later we developed the world's first TBC on a PC card. Today, we offer the industry's widest assortment of rackmount and PC card based models. **From \$850**



► **YOU NAME IT!**

Master sync and test signal generators, remote control systems and digital waveform monitor/vectorscope cards. These are just some of the other quality DPS products we build with your needs and budget in mind. Visit our web site at www.dps.com or call 800-455-8525 to request our Studio Line Video Catalog.




DPS
DIGITAL PROCESSING SYSTEMS

See us at NAB Booth #5453

Canada: 905-944-4000 Fax: 905-944-4200 • USA: 606-371-5533 Fax: 606-371-3729 • Europe: 1252-718300 Fax: 1252-718400 • Asia-Pacific: 61-2-9586-0088 Fax: 61-2-9586-0988 • Web Site: www.dps.com

Circle (69) on Free Info Card

www.americanradiohistory.com

SNEAK PEEKS

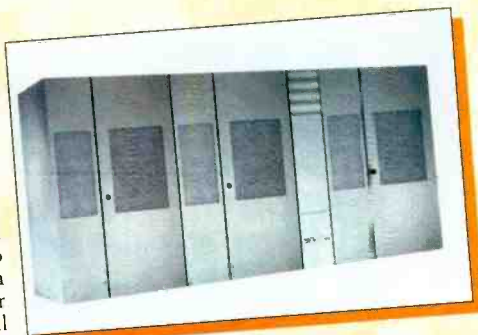


Macromedia's Final Cut is a high-performance tool for digital video editing, compositing and effects. The cross-platform video software uses open system media layers to meet your productivity and quality needs. Using the latest versions of QuickTime on Windows and Macintosh system software allows applications to work with digital video hardware from a variety of vendors.

Macromedia, 600 Townsend St., San Francisco, CA 94103; 800-326-2128; 415-252-2000; fax 415-625-0554; www.macromedia.com

Circle (1309) on Free Info Card

MGE UPS Systems is introducing its new 750kVA rated EPS 6000 uninterruptible power supply. This UPS is designed to accommodate users' current, as well as future, power usage demands. It features insulated gate bipolar transistors combined with MGE's advanced Digital Power Quality micro circuitry. The on-line design ensures clean, reliable power even in the harshest electrical environments.



MGE UPS Systems, 1660 Scenic Ave., Costa Mesa, CA 92629; 714-557-1636; fax 714-557-2256

Circle (1308) on Free Info Card

Electro-Voice, a division of EVI Audio, is introducing its latest supplement to the RE series with the RE500. This hand-held condenser microphone is appropriate for live or studio use and offers many of the advantages found in the RE2000, including its externally biased, true condenser element. This element is less susceptible to temperature variations than the more common electret design.

EVI Audio, 602 Cecil St., Buchanan, MI 49107

Circle (1310) on Free Info Card



**KEVIN MCNAMARA
PRESIDENT,
EXEGESIS TECHNOLOGIES,
NEW MARKET, MD**

What's going to be hot at NAB 97:
HDTV will be at the top, followed by DVD, Internet audio servers, RBDS, digital storage/automation (especially the networked variety) and WAN between facilities.

What's not going to be hot at NAB 97 that has been in the past:
Remote ISEN and DTS codecs, CD players (being surpassed by hard-disk and DVD)

What I'll be looking for at NAB 97:
Everything I have time to see.

The conference sessions I want to attend:
Presentations on HDTV, computer networking, marketing skills and any truly new technologies

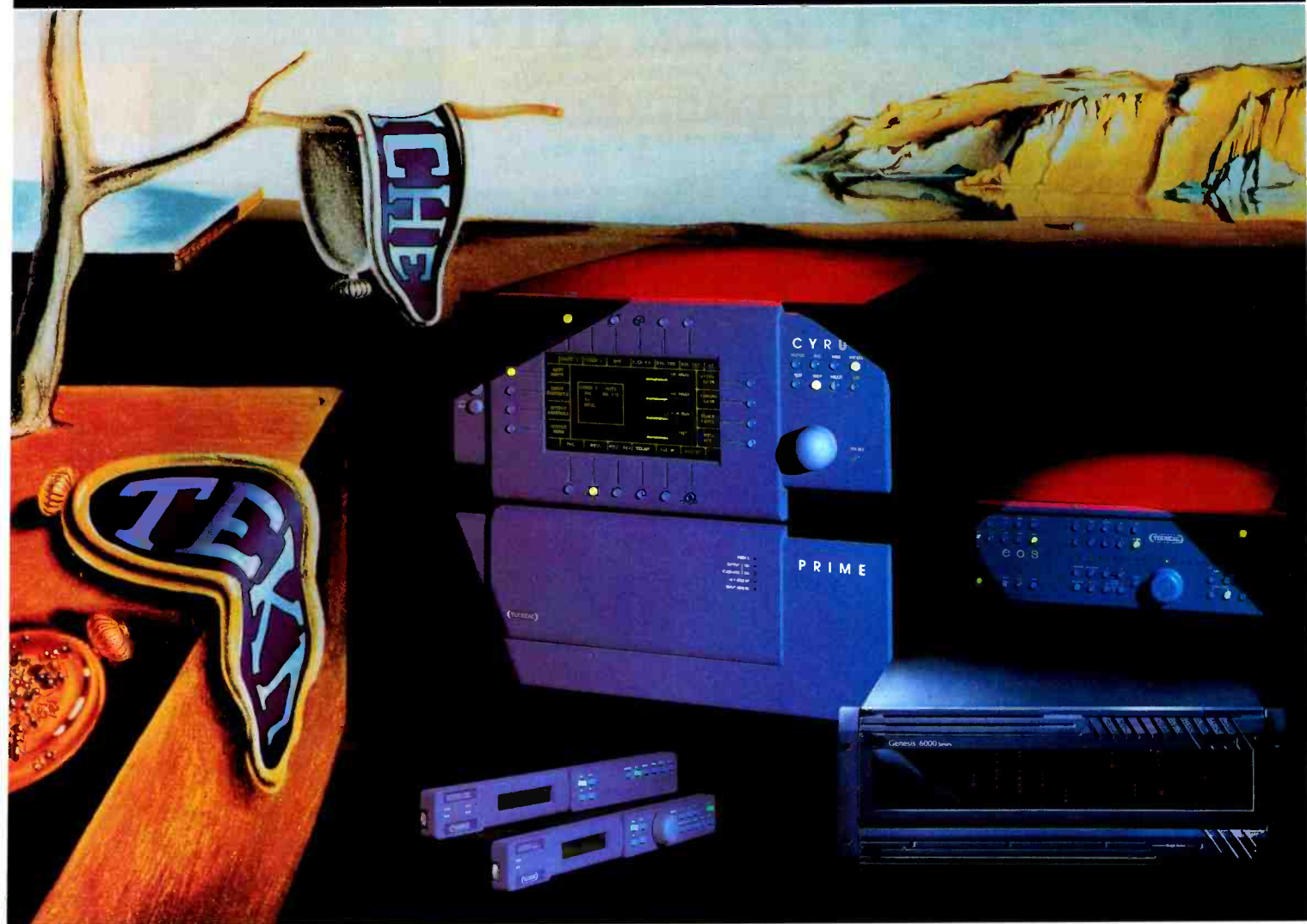
Where I recommend hanging out after hours:
The Steakhouse in Circus Circus, Ruth's Chris Steakhouse (there are two in town), Tony Roma's, Marie Callender's (for breakfast), Hoover Dam and Lake Mead

My tips for first-time attendees:
When scantily clad models hand you brochures, don't ask for their phone numbers.

My view of the industry:
Interestingly, the effects of consolidation in the industry are creating more opportunities for people outside the station (i.e., contractors, consultants, etc.) than ever existed before inside the station.



Putting you in the picture...



...with our range of converters and interfaces!

Tekniche now provides the most comprehensive range of conversion products worldwide, and is converting some of the world's leading broadcasters and video companies.

Genesis - an advanced technology modular system providing video, audio and fiber optic interfaces and converters for digital and analog systems.

TACS - a universal system for status monitoring and control of the Tekniche range of products, using SMPTE 273 protocol.

Standards Converters - a comprehensive range of motion-compensated and linear converters to suit all applications.

DX Translators - Encoders, decoders and format translators for composite D1 and D2 applications.

Circle (79) on Free Info Card



© NATAS 1994

TEKNICHE, INC.: 100 STONEHURST COURT • NORTHVALE, NJ 07647

U.S. Tel: +1 201-784-2288 • **Fax:** +1 201-784-8860 • **E-Mail:** Tekniche@AOL.com

U.K. Tel: +44 (0) 1483 728006 • **Fax:** +44 (0) 1483 770195 • **E-Mail:** 72052,211@Compuserve.com

Hong Kong Tel: +852 2776 0628 • **Fax:** +852-2776 0227 • **E-Mail:** 100125,2724@Compuserve.com

Brazil Tel: +55 (0) 21 622 1536 • **Fax:** +55 (0) 21 622 1825



Tekniche - the digital solution!

SNEAK PEEKS



Knox Video has newly designed character generators. The K20.ND comes standard with Y/C and NTSC video as, well as with expanded 64-page non-volatile memory. The K40.ND (photo) also features Y/C and NTSC video, expanded 64-page memory, serial interface, and a four-font upgrade. In addition, the K40.ND includes A/B video source switching with audio-follow-video, built-in fader and downstream keyer. Each character generator has an internal power supply and a separate keyboard.

**Knox Video, 8547 Grovemont Circle,
Gaithersburg, MD 20877; 301-840-5805;
fax 301-840-2946**

Circle (1314) on Free Info Card



News Digital Systems will be showcasing its System 3000 digital TV broadcast system. The System 3000 is a complete, end-to-end system for delivering digital video and audio over a host of mediums including satellite, cable and terrestrial. New additions to the system include a fully functional 4:2:2 encoder and the industry's most technologically advanced statistical multiplexing system.

**News Digital Systems, 3501
Jamboree Rd., Ste. 200,
Newport Beach, CA 92660;
714-725-2520; fax 714-725-2525**

Circle (1315) on Free Info Card

Storage Concepts Inc. will show its new C814 FibreRAID with a sustainable transfer rate of 100MB/s. Based on a new real-time controller platform, the C814 FibreRAID features fault-tolerant power supplies, redundant pluggable disks, dual fiber-channel host connectivity, extensive error logging and RAID functionality control with a cableless system chassis design providing up to 72GB of storage per 5 1/4-inch chassis.

**Storage Concepts, 2652 McGaw Ave., Irvine, CA 92714; 800-525-9217 or
714-852-8511; fax 714-852-8930**

Circle (1317) on Free Info Card



The Quattro four-stage studio/mobile pedestal from **Vinten Inc.** offers many innovative design and operation features. The unique triangular structure of the four-stage column provides maximum rigidity and stability, while minimizing torsional twist. In addition, a new balancing system using mechanical and pneumatic design offers perfect balance throughout the four stages of elevation.

**Vinten Inc., 709 Executive Blvd.,
Valley Cottage, NY 10989;
914-268-0100; fax 914-268-0113**

Circle (1318) on Free Info Card



Ross Video is showing the CDK 101 component digital keyer, the world's first DA-sized digital keyer. The video format is 10-bit, 270Mb/s, SMPTE 259M-C component serial digital. Both 625- and 525-line formats are supported and the CDK 101 can be used for bug keying, adding keys to cuts-only editing, side-by-side picture comparisons and chroma keying.

**Ross Video, P.O. Box 880,
Ogdensburg, NY 13659;
613-652-4886; fax 613-652-4425;
solutions@rossvideo.com;
www.rossvideo.com**

Circle (1319) on Free Info Card



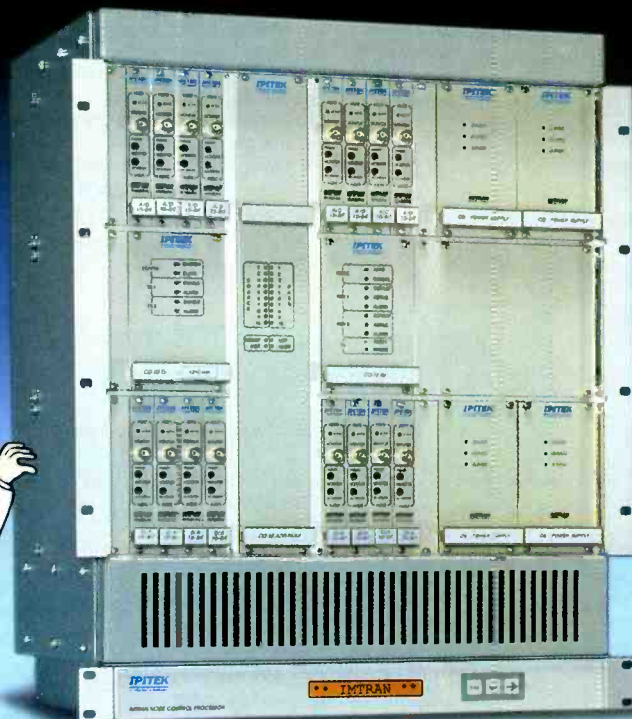
Chyron will showcase WiFiniT!, a Microsoft Windows NT graphical user interface for iFiniT!, MAX! and MAXINE! systems. Other Chyron products include the keyPC keyboard with an embedded Pentium CPU, as well as the Scribe NT character generator that uses Windows 95/NT to control Chyron's pcCODI or Truevision's video graphics cards. New performance options for the iFiniT!, MAX! and MAXINE! systems include Power PC support, 100 base T Ethernet file transfer, and CLYPS motion JPEG support for real-time video clip playback.

**Chyron, 5 Hub Dr., Melville, NY 11747; 516-845-2026;
fax 516-845-3895; sales@chyron.com; www.chyron.com**

Circle (1320) on Free Info Card

Air traffic controller

"The NodeWizard knows all, controls all."



ON AIR

If quality air time – all the time – is your responsibility, meet the IMTRAN® CQ-10RT. This fiber-optic terminal is a fully-integrated, multichannel, digital transceiver made especially for networking – such as video rings or cable system backbones.

This compact unit has a powerful optical transmitter, a sensitive optical receiver plus all the signal and multiplexing modules to transmit and receive up to 10 channels of video, 40 channels of audio and a variety of data transmission options such as T1 and DS-3, all on one fiber. The digital transmission loses no quality with distance, repeats or drop/add/pass with top signal performance assured by 8 or 10-bit uncompressed

video coding. Best of all, it has built-in drop/add/pass functions that can be remotely controlled.

To give your CQ-10RT network plenty of extra smarts and security, add the Node Control Processor and the NodeWizard software. It's a powerful network management and communications tool, with a graphical user interface. With NodeWizard you can remotely control and monitor CQ-10RT terminals plus other equipment at each node in your network.

To find out more, contact us for our information package at 888-4-IPITEK or E-mail us at ipitek@tacan.com.



Come see us at NAB '97
Booth # 10182

WE'VE GOT CONNECTIONS

IPITEK
INTEGRATED PHOTONIC TECHNOLOGY

2330 Faraday Avenue, Carlsbad, CA 92008 • Tel: (619) 438-8362 • Fax: (619) 438-2412 • E-mail: ipitek@tacan.com

Circle (81) on Free Info Card

www.americanradiohistory.com

SNEAK PEEKS



Audio OnLine is a new caller-interactive audio information service being introduced by **Henry Engineering**. It is ideal for TV stations "information lines" where viewers can call a telephone number to receive information such as weather reports, traffic updates, school closings, etc. The system is menu-driven and an on-screen call-counter tracks the number of times each message has played. The audio quality is equivalent to a CD playing through a phone line. Up to 16 phones can be answered simultaneously.

**Henry Engineering, 503 Key Vista Dr.,
Sierra Madre, CA 91024; 818-355-3656;
fax 818-355-0077; www.henryeng.com**

Circle (1321) on Free Info Card

Odetics Broadcast is unveiling a solution for the next generation in broadcast automation — the Roswell facility management system. Controlling a variety of broadcast storage and switching devices through distributed client/server software, Roswell signifies Odetics' entrance into the stand-alone broadcast management system market. The system automates material and media tracking, provides multichannel automation and performs real-time machine control for small TV stations and large broadcast installation alike.

**Odetics, 1515 S. Manchester Ave., Anaheim, CA 92802;
714-774-2200; fax 714-535-8532**

Circle (1322) on Free Info Card



Fujinon's Broadcast and Communications Products Division is introducing a new A15X8 EVM/ERD handheld ENG zoom lens. This product combines lightweight, unmatched optical performance and a new inner focusing system to produce unprecedented image quality using Fujinon's proprietary Aspheric Technology (AT). AT provides a dramatic reduction in spherical aberration and the A15X8 EVM/ERD also offers outstanding telephoto features to go along with its 15X zoom ratio.

**Fujinon, 10 High Point Dr.,
Wayne, NJ 07470; 201-633-5600;
fax 201-533-5216**

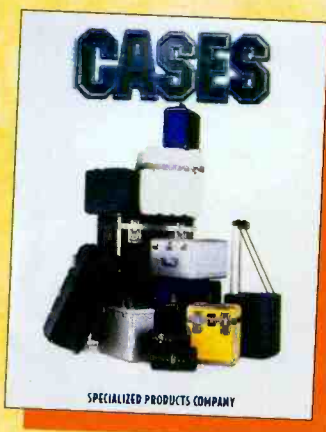
Circle (1325) on Free Info Card



Nemal has introduced a remote-control cable for use with Sony Paintbox remotes. The cable includes the typical RCC cable together with four color-coded audio pairs and a single precision coaxial cable with an overall flexible jacket. The cable greatly facilitates the use of the Sony remotes in field applications and provides all of the required interconnections within a single jacket.

**Nemal, 12240 N.E. 14th Ave., N. Miami,
FL 33161; 305-899-0900; fax 305-895-
8178; custsvc@nemal.com**

Circle (1326) on Free Info Card



Specialized Products Company has released its new comprehensive Case Catalog. The 32-page collection features a multitude of cases designed for virtually every application. SPC offers a large selection of high-density, reusable shipping containers in more than 100 configurations, plus styles for many other uses. Some cases have watertight hard shells, while others are soft-sided padded styles. Specially designed cases are also available to prevent dust contamination in clean-room environments.

**Specialized Products Company,
3131 Premier Dr., Irving, TX 75063;
214-550-1923; fax 214-550-1386**

Circle (1327) on Free Info Card



An expanded product range will be launched by **Tekniche** with the first demonstrations for the IXION standards converters. These high-quality 10-bit standards converters in 1RU cases offer serial digital input and output, as well as sophisticated noise reduction and audio handling. Tekniche will also exhibit the TACS (Technical Assessment and Control System) network management system which provides a mechanism for communication between equipment racks, remote control panels and a system supervisor PC. Several additions have also been made to the Genesis range of digital interface products.

**Tekniche, 100 Stonehurst Ct., Northvale, NJ 07647;
201-784-2288; fax 201-784-3860**

Circle (1323) on Free Info Card

Telect is unveiling an enhanced VersaFrame 2000. A uniquely versatile modular frame, the VersaFrame 2000 now supports several new audio and video modules, including a color bar and tone generator, a 16x16 digital video routing switcher, and a digital distribution amplifier, providing even more options for custom system configuration.

**Telect, 2111 N. Molter Rd., Liberty
Lake, WA 99019; 800-551-4567 or
www.telect.com**

Circle (1324) on Free Info Card



Fresh out of beta site testing, the **SPACE** digital video recorder from **Pluto Technologies** will be on exhibit. **SPACE** records full-bandwidth, uncompressed 8- or 10-bit video. It is the first in a series of product developments which Pluto will announce, which are designed to create the world's first uncompressed storage system for high-end post-production and other video applications. **SPACE** marries the plug-and-play features of a VTR with the networking and random-access capabilities of high-performance computing. It is configurable anywhere from eight minutes up to two hours and will work ideally as a bridge between video environments and resolution-independent computer environments.

**Pluto, 2511 55th St., Boulder, CO 80301;
303-402-9000; fax 303-541-9343**

Circle (1328) on Free Info Card

Simultaneous on-air channels

24

Hours of online storage

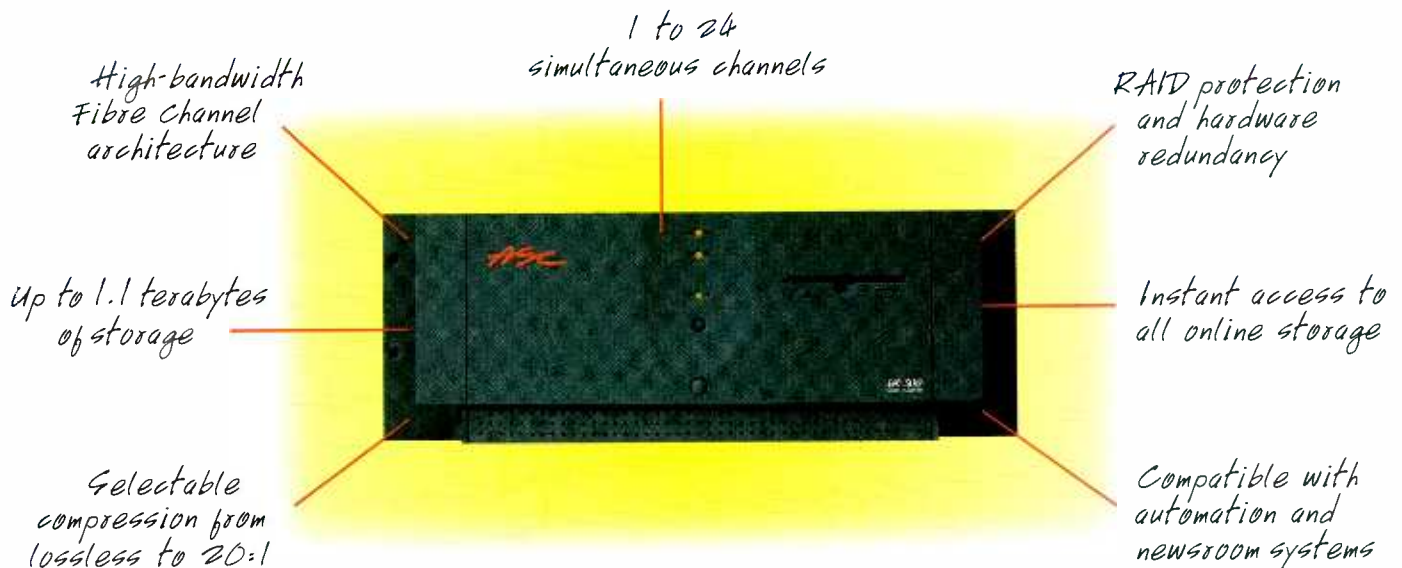
96

Single points of failure

0

System has it all

1



ASC's **VR 300™** Broadcast Video Server

ASC

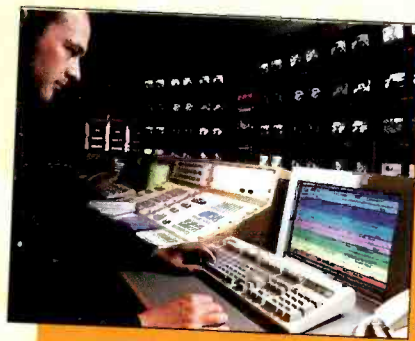
See it working at NAB booth #9258 or call 818-843-7004.

©1997, VR is a registered trademark and VR 300 is a trademark of ASC Audio Video Corporation.

Circle (82) on Free Info Card

www.americanradiohistory.com

SNEAK PEEKS

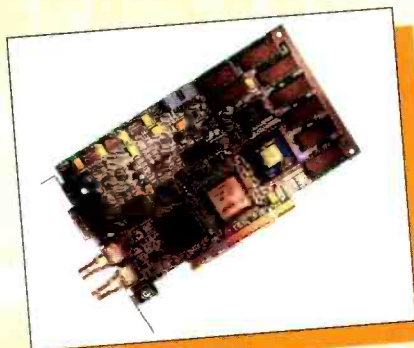


McCurdy will be demonstrating the D-MAS multichannel TV broadcast system with interface to various types of broadcast equipment and traffic systems. Flexible cache control and Fibre Channel interfaces provide seamless integration to video servers and library systems including the Tektronix Profile.

Also featured will be the McCart digital audio storage system, the DCS3000 digital intercom, as well as audio metering and monitoring products, including the ATS-100 extended range VU/PPM meter.

McCurdy, 30 Kelfield St., Toronto, Ontario, Canada M9W 5A2; 416-243-6155; fax 416-248-6755

Circle (1329) on Free Info Card



Vela Research will debut its 4:2:2 Studio Profile encoder and decoder products. Vela's PCI 4:2:2 Studio Profile decoders (photo) are equipped with options for NTSC or SDI outputs. The company's ISA SCSI-2 Main Level @ Main Profile decoder has output options for SDI, serial digital, component video or YUV component analog video. A new SCSI-2 four-channel decoder will also be premiered.

Vela Research, 2501 118th Ave. N., St. Petersburg, FL 33716; 813-572-1230; fax 813-573-2508

Circle (1331) on Free Info Card



A breakthrough in virtual studio technology is being shown by RT-SET. The company's RT Shadow allows true 3-D shadows to be cast into a virtual set environment. This option recognizes all physical and virtual objects creating shadows that appear smoothly in real time. The shadow has precisely the same perspective in the virtual world that it would have in the physical world.

RT-SET, 2230 Martin Ave., Santa Clara, CA 95050; 408-988-2330; fax 408-986-0452; www.rtset.co.il

Circle (1333) on Free Info Card

Mackie Designs has announced the first in its new Fast Recovery Series line of products, the M•1200. This premium power amplifier boasts more current output, more useful features and more solid reliability. It includes constant gradient T-design cooling, built-in features instead of expensive add-on modules, an informative, practical front panel and a well-labeled rear panel.

Mackie Designs, 16220 Wood-Red Rd. NE, Woodinville, WA 98072; 800-898-3211 or 206-487-4333; fax 206-487-4337

Circle (1335) on Free Info Card

JK Audio has developed a phone-line hybrid and a universal handset interface in one product. The RemoteMix3 is an all-in-one product that can get audio in and out of analog and digital phone systems, even multi-line PBX and ISDN systems. Features include two-mic inputs, XLR in and out, RCA in and out, built-in speaker and microphone, two headphone jacks, tone keypad and ringer. It can run 30+ hours on two 9V batteries or the AC adapter can be used.

Also from JK Audio, see the QuickTap IFB telephone handset IFB tap that can quickly be installed between the handset of your analog or digital telephone.

JK Audio, 2701 N. 45th Rd., Sandwich, IL 60548; 815-786-2929; fax 815-786-8502; www.jkaudio.com

Circle (1336) on Free Info Card



Several new products will be displayed by Telex Communications, such as the Radiocom UHF wireless intercom. The BTR-600 UHF full duplex wireless intercom provides the user with two independent audio channels and frequency agility in case of interference. The BTR-600 is based on a base to single user allowing you the flexibility to connect the exact number of users together.

A few of the many other products from Telex include its digital-to-analog tape duplication/editing system, the LCP-100 series level control panels for ADAM intercom systems and the CamLink II, which brings wireless freedom to video and film production.

Telex, 9600 Aldrich Ave. S., Minneapolis, MN 55420; 612-884-4051; fax 612-884-0043

Circle (1330) on Free Info Card

Sonic Solutions will be demonstrating its Sonic DVD Creator system for complete DVD premastering. It is comprised of systems for MPEG-2 variable bit rate video encoding, Dolby Digital Surround and MPEG-2 audio encoding. The system provides a workgroup solution for high-quality, high-productivity DVD production.

Other products from Sonic Solutions include the latest release of Sonic Studio, Mezzo Interchange software and On-Air Suite of applications and workstations.

Sonic Solutions, 101 Rowland Way #110, Novato, CA 94945; 415-893-8000; fax 415-893-8008

Circle (1332) on Free Info Card

The UltraGraphix ULTRA weather system from AccuWeather is better than ever with more than 100 additional enhancements. The system blends precipitation, temperature, moisture and wind fields together automatically showing the evolution, animation and movement of weather systems now and into the future, up to 10 days in advance. You can create ready-for-air animations in minutes and a complete, fully animated weather presentation can be created in less than 30 minutes.

AccuWeather, 619 W. College Ave., State College, PA 16801; 800-566-6606 or 814-234-9601; fax 814-231-0453; intemail@accuwx.com; www.accuweather.com

Circle (1334) on Free Info Card





MAKING A SPLASH IN UHF BROADCAST

Introducing UHF-TV Klystrons From Litton

Litton Electron Devices, Williamsport, PA, a leader in the manufacture and repair of vacuum tubes, is now rebuilding and repairing tubes for the UHF-TV Broadcast Industry.

Litton has been designing and producing high performance, cost effective microwave power devices for over 40 years. Magnetrons, cross-field amplifiers, klystrons, traveling wave tubes and thyratrons are all designed to meet strict military and commercial specifications. This background provides Litton with the expertise and technical capabilities to rebuild and repair UHF-TV klystrons.

LITTON ELECTRON DEVICES
1035 Westminster Drive / Williamsport, PA 17701

Litton

Electron Devices

Consider the following list of capabilities:

- | | |
|--|---|
| • Complete rebuild or repair of Series 89X, 95X, and 755X UHF-TV Klystrons | • Tuned to specific channel frequency |
| • Prompt inspection and return of Evaluation Report | • Shipment from stock in many cases |
| • Quick turnaround of repairs | • Cash/credit for DUDS |
| • Rebuild/repair to specification standards | • Technical back-up and service |
| • ACE gun provided on all rebuilds | • 800 number for easy access to service |
| • Tubes fully tested to assure performance | • Also prepared to provide the L-4945A deuterium filled, double gap ceramic crowbar thyratron (equivalent to the EEV CX-2708) |
| • New tube warranty | |

Call our UHF-TV HOTLINE at **800-861-1UHF** for pricing, stock availability, DUD purchase, questions, technical service, data sheets and tube information. Or fax us at 717-326-5816.

Circle (70) on Free Info Card

www.americanradiohistory.com

NAB97

SNEAK PEEKS



Extron is introducing its first line-quadrupler, the System 4LQex. The system will switch balanced and unbalanced two-channel, stereo audio and delivers film-like video image quality. As the system increases horizontal scan rate by a factor of four, it provides most CRTs with optimum efficiency by maximizing light output. In addition to increased picture brightness, the image becomes smoother and has greater clarity.

Also from Extron, look for the Emotia Xtreme offering advanced scan conversion technology
Extron, 1230 S. Lewis St., Anaheim, CA
92805; 800-633-9876 or 714-491-1500;
fax 714-491-1517

Circle (1338) on Free Info Card



Sony will be showing several new products including the DNE-1000 non-linear news editing workstation. This powerful editing system, which together with Sony video file servers, is designed to produce high-quality broadcast news, documentary and magazine programs. It offers the flexibility to function as a stand-alone or networked workstation and can be configured for A/B roll editing.

Sony Electronics, 1 Sony Dr., Park Ridge, NJ 007656; 800-SONY-022 or 201-930-7834; fax 201-358-4059;
Kallen@ccmail.nhg.sony.com; www.sony.com

Circle (1341) on Free Info Card

Two new UHF true diversity wireless microphone receivers are available from **Sennheiser**. The EM3031-U and the EM3032-U each offer 32 programmable UHF receiver frequencies and state-of-the-art circuitry that incorporates PLL synthesis. The EM3031-U is a single-channel UHF true diversity receiver while the EM3032-U is a two-channel UHF true diversity receiver, with an integrated antenna splitter that splits a single pair of antennas to both receivers.

Sennheiser, 6 Vista Dr., Old Lyme, CT
06371; 860-434-9190; fax 860-434-1759;
www.sennheiserusa.com

Circle (1343) on Free Info Card

Along with many other products, **Hitachi** is announcing the Z-2000B professional portable camera, an update to the Z-2000. The Z-2000B provides all the features and functionality of the previous camera in addition to one full f-stop more sensitivity.

Also from Hitachi, the SK-3000 HDTV is a multistandard camera that provides simultaneous HDTV and NTSC outputs. The digitally processed camera head uses 2,000,000 pixel CCDs and operates in a 16:9 format at all times. This high-performance camera offers 1,200 TVL of resolution (HDTV), f8.0 at 2,000lux sensitivity. The field rate is switchable from 60Hz to 59.94Hz.

Hitachi, 150 Crossways Park Dr., Woodbury, NY 11797; 516-921-7200; fax 516-496-3718

Circle (1337) on Free Info Card



Harris Corporation's Broadcast Division will exhibit a new solid-state digital TV transmitter based on Westinghouse's Silicon Carbide RF devices. Silicon Carbide, which first made its appearance years ago in blue LEDs, promises significant benefits in high-power transmitters. Most notably, SiC has higher heat handling capabilities than silicon (Si), which is currently used in RF devices. Silicon maintains semiconductor properties to temperatures as high as 200° Centigrade, while SiC can operate at junction temperatures in excess of 300° Centigrade.

Harris, 3200 Wismann Ln., Quincy, IL 62305; 217-222-8200;
fax 217-222-0581; hbd@harris.com; www.broadcast.harris.com

Circle (1339) on Free Info Card

Belden Wire & Cable will introduce its five latest additions to the Brilliance line of broadcast cables. First off is the Star Quad Mic cable featuring a unique cable conductor construction and the use of a paper tape designed to help reduce triboelectric noise. For error-free transmission of digital audio over extended distances, the company now offers the AES/EBU digital audio patch cable that terminates easily for multichannel audio applications where individual channels must be split out from the punchdown block. Belden has also extended its Super VHS cable line offering a Plenum zip-style dual coax version. And finally, Belden is introducing the new CM-rated bundled computer CAD/CAM applications.

Belden, 2200 US Hwy. 27S., Richmond, IN 47374; 800-235-3361 or
317-983-5200; fax 317-983-5294

Circle (1340) on Free Info Card



For electronic field production and ENG applications, **Panasonic** has its AJ-D800 DVC PRO camcorder with three 2/3-inch ITCCDs. Compared to the AJ-D700, the AJ-D800 offers improvements in light gathering, dynamic range and vertical smear reduction that produce acquisition material that is fully suitable for extensive post-production.

Panasonic will also be featuring a fast transfer video editing workstation, a non-linear editing system which has a built-in DVCPRO VTR, with disk transfers at four times faster than normal speed. Another new product from Panasonic is the AT-H190DP, which features key improvements to the AT-H190SDP all-digital processing broadcast monitor.

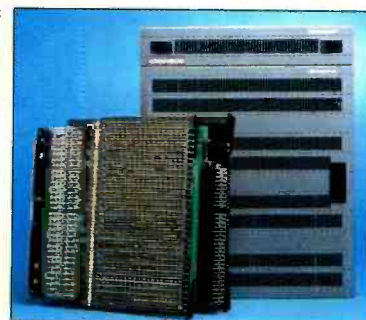
Panasonic, One Panasonic Way, Secaucus, NJ 07094; 800-524-0864

Circle (1342) on Free Info Card

One of the products being shown by **Utah Scientific** is the SC-3 routing control system. This router control system was designed to complement the UTAH-300 router to offer the most powerful routing solution available. The advanced design maintains compatibility with all previous Utah Scientific, Alpha Image and Dynatech routers, as well as offering the ability to control new and older routers from other manufacturers. The UTAH-300 routing switcher system allows the use of analog and digital video in the same frame.

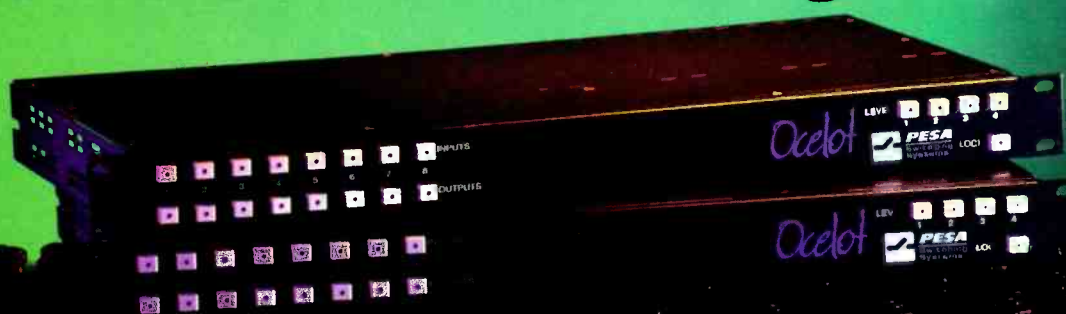
Utah Scientific, 4750 Wiley Post Way, Salt Lake City, UT 84116; 800-453-8782 or 801-575-8801; fax 801-537-3099; info@utsci.com; www.utsci.com

Circle (1344) on Free Info Card



Ocelot

This Cat Can Change Its Spots



Ocelot adapts to your dynamic routing switcher environment, with interchangeable 8 X 8 modules that accommodate wide bandwidth analog and serial digital signals. Changing from analog to digital is a simple module switch.

Ocelot can be controlled from the integrated control panel on the chassis, remote control panels, or the Windows™ based Virtual Control Panel. The Virtual Panel puts router

control on your workstation or via VPNet network interface - ideal for multimedia production environments.

Ocelot increases your capabilities with hardware and control flexibility in a compact system package. Call today and put the power of the Ocelot to work for you.

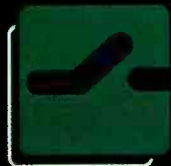
- 250MHz Wide Bandwidth Analog Video
- 360Mbit/s Serial Digital Video
- Windows™ Based Control Interface
- 8 X 8 and 16 x 16 Matrix sizes
- User friendly installation of RGB and Y/C



PESA Virtual Panel



RGB Configuration of the Ocelot



PESA
Switching
Systems

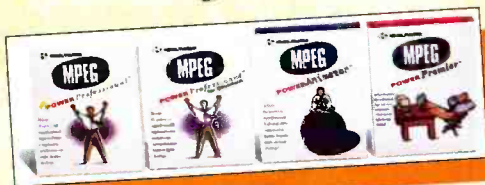
CORPORATE SALES

35 Pinelawn Road, Suite 99E, Melville, NY 11747
Tel: 516-845-5020 1-800-328-1008 Fax: 516-845-5023
<http://www.pesa.com>

Circle (71) on Free Info Card

NAB Booth 10958

SNEAK PEEKS



Heuris/Pulitzer's new MPEG Power Premier makes video compression a simpler and more familiar task than was possible a few months ago. You can import data from several desktop editing products using digitizing boards. It also allows you to take your native files from leading editing systems and output to MPEG (without having to output to videotape) for multimedia presentations or remote collaboration over the Internet.

Heuris/Pulitzer, 2675 Scott Ave., Ste. G, St. Louis, MO 63101; 800-923-9232 or 314-534-1514; 314-534-4351; www.heuris.com

Circle (1346) on Free Info Card



For the first time, **Thomson Broadcast Systems** will be showing its new family of 12-bit digital cameras based on the 1657D. The 1657D is the heart of the system and is available in several configurations suited to different operating conditions: camcorder, conventional PSC, Triax, Microcam or Sportcam. The camera is also available with a choice of sensor, either an economical interline transfer sensor in 4:3 format, with considerably reduced smear level, or a frame interline transfer sensor switchable 16:9-4:3 in a top-of-the-range configuration.

Thomson Broadcast Systems, 17 rue du Petit Alb, BP 8244, F-95801 Cergy St Christophe, France, +33 1 3420 7000; fax +33 1 3420 7047

Circle (1348) on Free Info Card

Videotek has announced a new 601 format waveform monitor/vectorscope, the TVM-821D. It is offered as the utility waveform monitor and vectorscope for all 601 production and post-production activities. The instrument is based on the traditional tube format, and instead of menus or hidden function buttons, the TVM-821D features easy-to-use buttons and knobs. Other new products from Videotek include the SDR-800 series serial digital matrix routing switchers and the VTM-200 multifunction onscreen monitor. The new VSG-203D and VSG-204D round out the family of digital sync generators from Videotek.

Videotek, 243 Shoemaker Rd., Pottstown, PA 19464; 800-800-5719 or 610-327-2292; fax 610-327-9295

Circle (1349) on Free Info Card



Thomson Broadcast Systems will be exhibiting its 1657D Sportcam that allows a portable camera to be transformed into a truly multifunction camera. Its modular construction provides flexibility allowing a single assembly to provide sports coverage with a long zoom lens (62x or 70x) as well as being used for field production or use in the studio with a prompter.

Thomson Broadcast Systems, 17 rue du Petit Alb, BP 8244, F-95801 Cergy St Christophe, France, +33 1 3420 7000; fax +33 1 3420 7047

Circle (1350) on Free Info Card

Discreet Logic will be showcasing two products from its broadcast production product line. V2.0 of its VA-POUR virtual set system and V2.0 of the FROST 3-D new graphics system will be shown.

Discreet Logic, 5505 boul St Laurent #5200, Montreal, Quebec H2T 1S6 Canada; 800-869-3504 or 514-272-0525; fax 514-272-0585; info@discreet.com; www.discreet.com

Circle (1345) on Free Info Card



QTV is introducing the WINCUE PRO/PRONews/LT prompting software for Windows 95/NT. Among its many features are a multicolumn editor with instant live update of prompter text in any story, runorder management, drag-and-drop of text and runorders, spell check and thesaurus. An internal or external image motion technology device provides smooth scrolling output in gen-lockable NTSC and PAL standards. Also from QTV is the WINCUE NET scripting/runorder management software that is multi-user and networkable.

QTV, 104 E. 25th St., New York, NY 10010; 212-460-9050; fax 212-529-9679; sales@qtv.com

Circle (1347) on Free Info Card



The 1657D Microcam from **Thomson Broadcast Systems** comprises a 1657D camera body with the CCD block-mounted remotely. The separate CCD block and camera body are linked by a 26-pin multicore cable, up to 100m long, with automatic equalization. This construction provides an extremely compact camera head, allowing shots that would be impossible for conventional portable cameras, while maintaining the same picture quality. Moreover, the CCD block can be remounted inside the camera body for use as a conventional portable camera.

Thomson Broadcast Systems, 17 rue du Petit Alb, BP 8244, F-95801 Cergy St Christophe, France, +33 1 3420 7000; fax +33 1 3420 7047

Circle (1351) on Free Info Card

PHILIPS

24-Hour On-Air Protection

Every day, hundreds of broadcast, cable and DBS systems worldwide, each with from one to 200 channels, depend on Alamar automation to keep their facilities running smoothly and their revenue streams flowing. Today, facilities operate 24 hours a day, seven days a week. So Alamar customer support is always available online to help protect their operational integrity.

Most of our customers never have to call us. But if they do, they can be assured that they will quickly reach a technician with broadcast experience, backed by a senior software engineer who knows the automation system down to code level. Users can access Alamar at any time and our people can answer questions, diagnose

Alamar online
Customer
Support is
accessible from
anywhere,
anytime.



Technicians at Alamar's Customer Support Center (top) can remotely access diagnostic logs at a user facility—such as KNBC-TV in Los Angeles (bottom)—and quickly analyze a problem or answer a question.

problems, make a software patch, or even upgrade their systems. It's all done remotely with features built into the automation system.

Even a night-shift master control operator thousands of miles away can get in touch with Alamar experts within minutes, if necessary. We understand how important your automation system is to the operation of your facility and the satisfaction of your viewers and advertisers. That's why we provide remote diagnostics in our automation systems.

Maybe you'll never have to call us, either. If you do, we're here, with 24-hour online protection.

See us at NAB Booth #9901

ALAMAR
a subsidiary of Philips Electronics North America Corporation

Alamar USA, Inc., 1711 Dell Avenue, Campbell, CA 95008 USA

Telephone: 408-866-9373 • Fax: 408-370-4861 • Web Site: <http://www.alamar-usa.com>

Circle (83) on Free Info Card

www.americanradiohistory.com

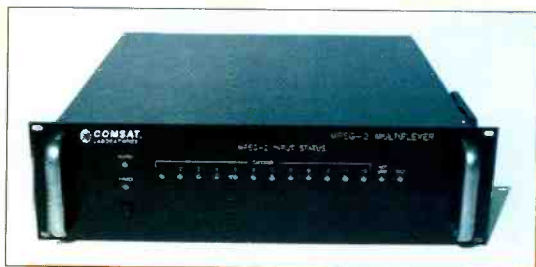
SNEAK PEEKs



Denon Electronics will be displaying the DN-M1050R MiniDisc recorder and player. Engineered primarily for recording and broadcast production studio environments, a comprehensive list of editing functions includes divide, erase track/disk, combine, move and track/disk name. An external IBM compatible keyboard can be used to perform playback, recording, program input, editing and other operations.

Denon Electronics, 222 New Rd., Parsippany, NJ 07054; 201-575-7810; fax 201-808-1608

Circle (1352) on Free Info Card



The DVM2000 from **Comsat Labs** is a 14-channel multiplexer with a variety of input and output interfaces, such as RS-422, ECL, DVB-ASI and DS-3/E-3. Multiple channels of digital compressed NTSC and ATV can be aggregated for terrestrial or satellite transmission. The input ports can be configured to accept protocol-independent high-speed datastreams enabling a host of multimedia and internet data broadcasting applications.

Comsat, 22300 Comsat Dr., Clarksburg, MD 20871; 301-428-4010; fax 301-428-4600

Circle (1355) on Free Info Card

Studio Systems Electronics has stepped into the professional broadcast marketplace with the RANGER, a mobile camera microwave link video enhancer. It processes the received video signal from the microwave link and maximizes picture quality by stabilizing the chrominance, locking on to the video signal and enabling all the video action to be captured, even from those difficult remote mobile cameras, where multipath reception is always a problem.

Studio Systems Electronics, Ltd., Unit 10 Falcon Business Park, Ivanhoe Rd., Finchampstead, Wokingham, Berkshire, England, RG40 5QQ; +44 (0) 1189 731737; fax +44 (0) 1189734 734679; E-mail L106600.475@compuserve.com

Circle (1356) on Free Info Card



Genex appointed **HHB Communications Inc.**, as exclusive distributor for the Genex GX8000 MO disk recorder. The GX8000 offers eight-track recording and playback on removable MO disks. With its tape-like operation, simple punch in/out and overlay recording, the unit is a true replacement for multitrack tape recorders. In the latest software version, up to four tracks can be recorded simultaneously at a sampling rate of 96kHz.

HHB, 43 Deerfield Rd., Portland, ME 04101; 207-773-2424; fax 207-773-2422; hhbcomm@gwi.net

Circle (1358) on Free Info Card



Miller Fluid Heads is launching the Arrow 50, a new approach to ENG/EFP camera control and the first new design in several years from the developers of fluid pan/tilt heads. The Arrow 50 design team worked closely with the latest 3-D CAD/CAM tools to transform the needs of professionals into an advanced support system. Weighing only 6.6 pounds and featuring a sleek, low-profile styling, the Arrow 50 complements the aesthetics and ergonomics of the new generation of portable digital cameras.

Miller Fluid Heads, 216 Little Falls Rd., Cedar Grove, NJ 07009; 201-857-8300; fax 201-857-8188

Circle (1353) on Free Info Card

WavePhone has created a broadcast PC consumer service, the WaveTop, a nationwide broadcast medium for the home PC. The broadcast service will deliver entertainment and information programming via existing TV broadcasting signals without the bottleneck of the Internet or the tying up of phone casting signals into the existing TV broadcast lines. The network operates by embedding data into the existing TV broadcast signals of PBS National Datacast's 264 PBS member stations. This high-speed, point-to-multipoint service will have the capacity to reach more than 99% of U.S. TV households simultaneously, yet requiring only one server. WavePhone and Intel jointly have announced the availability of a hardware developer's kit for Intel's InterCast Viewer and the broadcast services that will enable OEMs and IIVs to create data broadcast-ready PCs. WaveTop will initially feature seven major content categories that will be broadcast to users' PCs without interrupting ongoing activities. Users can access the content at their discretion by clicking on icons on a toolbar interface or directly through the standard Windows Interface.

WavePhone, contact Sandy Goldman at 602-952-5500, ext. 236 or sgoldman@wavephone.com

Circle (1354) on Free Info Card



Sierra Design Labs is exhibiting a 4:4:4:4 color space converter, its most recent addition to its family of digital disk recorders, video servers and accessories. The Digital Video Transcoder is a fully bidirectional 4:2:2:4 to 4:4:4:4 up/down real-time sampler. The Transcoder can accept full-range RGB images from Sierra's Quickframe DDR that have been downloaded from a workstation and output 4:4:4:4 or 4:2:2. This means that color correction or keying of computer images can be done in real time and in their native color space. Sierra Design Labs is also introducing the NFServer with ATM which brings speed and functionality to large-area ATM networks.

Sierra Design Labs, 999 Tahoe Blvd., Incline Village, NV 89451; 702-831-7837; fax 702-831-5710

Circle (1357) on Free Info Card

FUJINON AT2

Fujinon's new AT2 Technology.
Now you've got a clear shot
at the most unbelievable
images in the world.

Talk about out-of-this-world performance. Fujinon's new AT2 brings you the exceptional optical quality of Aspheric Technology, an advanced new inner focusing system that's sealed from dust and dirt, and the comfortable, comprehensive V-Grip too. We've also reduced chromatic aberration in the A1SX and A20X, raised their MTFs, and reduced MOD to 0.65 m on the A1S X 8 and 0.8 m on the A20 X 8. The 10X Wide Power even eliminates breathing, so image size remains the same, in or out of focus.



Winner of the Emmy in
Lens Technology*

You'll find AT2 only on Fujinon's A1S X 8, A20 X 8, and 10X Wide Power hand-held television zoom lenses. For more information, contact Fujinon at 1-800-553-6611.



A10 X 4.8

A1S X 8

A20 X 8



FUJINON

Broadcast & Communications Products Division

FUJINON INC. 10 High Point Dr., Wayne NJ 07470-7434 (201) 633-5600
FUJI PHOTO OPTICAL CO., LTD. 1-324 Uetake, Omiya City, Saitama 330 Japan;
Phone: 048-668-2152, FAX: 048-651-8517, TELEX: J22885

FOCUSED ON THE FUTURE

Circle (84) on Free Info Card

*Implementation in lens technology to achieve compatibility with CCD sensors.

www.americanradiohistory.com at NAB Show Booth #11031

SNEAK PEEKS



The Omega digital video recorders from **Fast Forward Video** replace analog and digital videotape with three upgradeable deck configurations. The Omega deck is a single-channel version ideal for all record and playback situations. A dual-channel version, Omega Double Deck, features independent and simultaneous record and playback capability. Omega RAID Deck is a dual-channel recorder with built-in RAID (disk array) controller. It features two independent channels with shared video storage making it ideal for A/B roll and non-linear editing applications.

Fast Forward Video,
18200-C W McDermott,
Irvine, CA 92614; 800-755-8463 or
714-852-8404; fax 714-852-1226; www.ffv.com

Circle (1360) on Free Info Card



Comark has created a line of VHF transmitters called the Optimum line designed to take advantage of the latest advances in solid-state technology. The transmitters deliver low-band and high-band VHF performance from a single wideband amplifier. The Optimum also provides a friendly user interface and is fully compatible with all U.S. and world standards, including tomorrow's digital standards.

Comark, P.O. Box 506, Colmar,
PA 18915; 800-688-3669 or
215-882-0777; fax 215-882-9129

Circle (1359) on Free Info Card



The **Comrex** HotLine codec for plain telephone lines delivers wideband, two-way audio on one plain telephone line and is ideal for the "last minute" remote or any application where ISDN is not practical. It travels light, weighing in at mere 2 1/2 pounds and includes a single channel mixer. It can be used alone or paired with the Comrex Buddy remote mixer.

Comrex, 65 Nonset Path, Acton,
MA 01720; 508-263-1800; fax 508-635-0401; www.comrex.com

Circle (1361) on Free Info Card

The Bridge to Digital

When you plan your move from the analog to the digital world, consider this... Other companies require up to six different frames to house their serial digital products, not fully compatible nor interchangeable.

Avitel uses **ONE** frame with our DARTnet communications system, allowing for automated monitoring and control of the signal.

When you are ready to cross the bridge to the digital world, choose the right solution for your facility. **AVITEL.**



A to D's
D to A's
DAs, EDH
Frame Synchronizers
Switchers

One Frame.....One Solution....

avitel

3678 West 2100 South • Salt Lake City, Utah 84120
(801) 977-9553 • Fax (801) 977-9674
Internet <http://www.avitel.co.uk>

Circle (85) on Free Info Card

See us at NAB Booth #11570

FUJINON 18X



Winner of the Emmy in
Lens Technology

Presenting Fujinon's new 18X Series. The most cost-effective lenses in the TV zoom jungle.

Fujinon's new 18X9 and 18X6.7 deliver the widest angle and highest magnification in their class. Add to that superb Fujinon optics, Aspheric Technology, 2X extender, macro, and rock solid construction... all in a 3-lb. package.

Fujinon's 18X lenses. King of the EFP jungle. For more information, contact Fujinon at 1-800-553-6611.



Broadcast & Communications Products Division
FUJINON INC. 10 High Point Dr., Wayne NJ 07470-7434 (201) 633-5600
FUJI PHOTO OPTICAL CO., LTD. 1-324 Uetake, Omiya City, Saitama 330 Japan;
Phone: 048-668-2152, FAX: 048-651-8517, TELEX: J22885

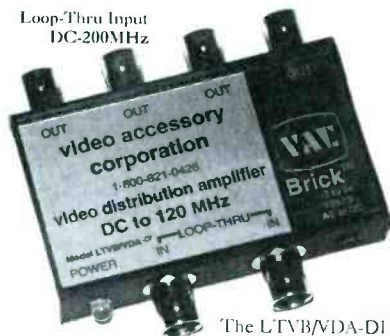
FOCUSED ON THE FUTURE

See us at NAB Show Booth #11031

The Brick™ D.A.s

A Benchmark in Price and Performance

Loop-Thru Input
DC-200MHz



The LTVB/VIDA-DI provides a loopthrough differential input making it ideal for those situations where the source signal cannot be interrupted, but where differential input and multiple unity gain outputs are needed.

S-Video



Clamping
DC-120MHz



Audio
Balanced
or Stereo



Differential
Input
DC-180MHz



Cable
Equalizing



Loop-Thru Input
Gain Control
DC-200MHz



NAB97 Booth 11235

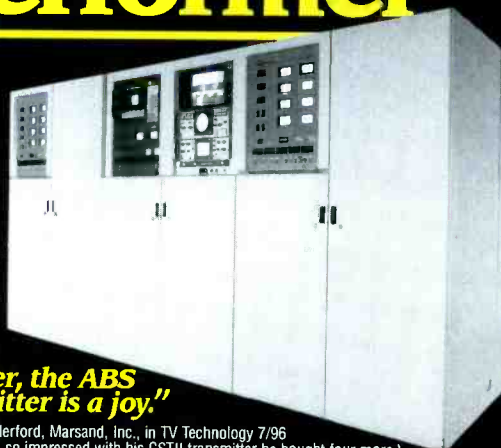


Quality Solutions

<http://www.vac-brick.com>

Circle (95) on Free Info Card

The Great Performer



"For the engineer, the ABS transmitter is a joy."

Matt Sanderford, Marsand, Inc., in TV Technology 7/96 (Matt was so impressed with his CSTII transmitter he bought four more.)

- Three year warranty
- Advanced amplitude and phase linearity correction
- Individual correction on each common mode IOT
- EEV-recommended Thyatron Crowbar and Filament Black Heat
- Computer supervision, with process logic control automation and advanced data acquisition software
- Direct plug-in to waveguide transition on tube output
- Easy access to components for servicing

UHF HIGH POWER BROADCAST TRANSMITTERS

ADVANCED BROADCAST SYSTEMS

800-499-4554

Circle (96) on Free Info Card

See us at NAB Booth #6560

SNEAK PEEKS



Neutrik is displaying its PowerCon locking AC power connectors. The new system is designed to fill the gap between the low-cost non-locking CEE 22 Type 113 (IEC 320) connector and the larger, more expensive three-phase power plugs. The PowerCon system consists of the A-Type for power inlet and the B-Type for power outlet. Each of-

fers a three-pole connection system with contacts for live, neutral and protective earth handling up to 20A/240V.

Neutrik, 195 Lehigh Ave., Lakewood, NJ 07801; 908-901-9488; fax 908-901-9608

Circle (1362) on Free Info Card

The Bel digital audio product series is being introduced by Wohler Technologies/Hazal Corporation. The Bel 1000 AES/EBU digital audio signal modifier is a break-out box enabling variation in gain, phase and destination of the four audio channels contained in two AES/EBU digital audio signals, thus avoiding the expense of using a digital mixer or routing system when only simple changes to the signal are required. The Bel 1100 is designed to indicate when no audio is present during transmission or at intermediate transmission or reception points. Accepting either analog or AES/EBU digital audio feeds, the Bel 1100 will automatically switch to an alternative input source if required and will provide correspondence alarm triggering. The Bel 7000 range of digital delay units are the only delay units specifically designed for the broadcast industry with such features as auto tracking to video sync and SMPTE time code are for use whenever audio and video need to be synchronized.

Wohler Technologies/Hazal Corporation, 713 Grandview Dr., South San Francisco, CA 94080; 415-589-5676; fax 415-589-1355; E-mail solutions@wohier.com

Circle (1363) on Free Info Card

For unattended video signal monitoring of multiple channel and remote transmission sites, check out the enhanced Magni WVM 720 from Magni Systems. This full-featured waveform/vector, automated video signal monitoring system is fully operational from a PC with Magni's new Windows-based LOGBOOK II software. LOGBOOK II implements full front-panel control and easy viewing of VITS signals, waveform/vector displays and WVM measurements screens on a PC.

Magni Systems, 9500 S.W. Gemini Dr., Beaverton, OR 97008; 800-237-5964 or 503-626-8400; fax 503-626-6225; Magni@teleport.com; www.teleport.com/magni

Circle (1364) on Free Info Card



**THE ONLY WAY
WE COULD CUT OUR
PRICE,**

**WAS TO BUILD
A BETTER JACK.**

Lighter, thinner, faster, cheaper you said. You didn't ask for much...

Well, since we were the first to introduce true 75Ω dual video jacks utilizing microswitch technology back in '89, we thought it only reasonable that we rise to your challenge.

Good call on your part.

Thanks to some innovative design and production advances, our next generation Serial Digital DVJs will, once again, establish new industry standards.

What have we done for you lately?

We substantially reduced the number of parts, achieving diminished size and weight while preserving durability and increasing performance.

Our front loading DVJs, with expanded bandwidth from DC to 1.4GHz, now fit quite comfortably into 26 position panels. And last but not least, our DVJs come with the industry's first published lifetime warranty.

Now it's our turn to issue a challenge...



compare our DVJ-W and DVJ-S with any other digital video jacks. Can you find one good reason not to switch to Canare?

CANARE

Come visit us in cyberspace

<http://www.canare.com>

CANARE

CANARE CORPORATION OF AMERICA

531 5TH STREET, UNIT A, SAN FERNANDO, CA 91340

TEL: (818) 365-2446

FAX: (818) 365-0479

Circle (97) on Free Info Card

See us at NAB Booth #11944

SNEAK PEEKS

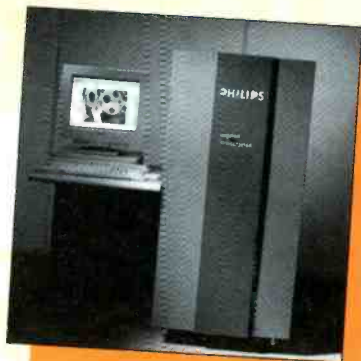


Ensemble Designs has created the MultiBuffer DS-1 Video Gateway for flawless graphics transfers between your computer and the video world. As an Ethernet networkable device, it is available as a resource to all workstations in your facility. The MultiBuffer DS-1 is CCIR-601 10-bit serial digital component. Video and Alpha (key) signals from 32-bit graphics are automatically sent to independent, simultaneous outputs, providing full support of graphics keying in editing and on-air environments.

Also from Ensemble Designs, the Catalyst networkable switcher and keyer, the new Still Store, Serial Box converters, Carbon O2 video I/O products and Jacquard CG solutions for SGI and TBC control systems.

Ensemble Designs, P.O. Box 993, Grass Valley, CA 95945; 916-478-1830; fax 916-478-1832; info@endes.com; www.ensembledesigns.com

Circle (1365) on Free Info Card



The state-of-the-art Media Server based on the latest hard-disk and real-time processing technology is at the heart of the Philips DVS near-video-on-demand/(impulse) pay-per-view solution. Designed for near-video-on-demand and broadcast applications, the fully MPEG-2/DVB-compliant Philips Media Server features scalable storage capacity and a scaleable number of output channels. The Media Server enables simultaneous loading and playback with a content loader that accepts MPEG data from tape, network or real-time feed, processes it to the correct format and stores it in the storage subsystem, avoiding interference with the playback process.

Other products from Philips include the QuickSat portable MPEG-2/DVB encoder and satellite uplink, the HyperVISION DVB subtitled system, the Compression System Manager, the CryptoWorks conditional access system for digital video distribution and the e-guide which provides onscreen support and guidance for making selections via a remote control.

Philips DVS, Bo G. Ferm, Bldg. Sx-113, P.O. Box 80002, 5600 JB Eindhoven, The Netherlands; +31 40 273 5258 (DDI); fax +31 40 273 2715; fermb@am.umc.se.philips.nl

Circle (1366) on Free Info Card

The Yamaha Corporation of America is introducing the 03D digital recording mixer. It is a smaller, more affordable version of the 02R digital recording console. The 03D will interface directly with digital audio workstations for automated digital mixing. Features include 24 inputs, four bus plus stereo output, six aux sends, two internal effects and built-in automation. The mixer accepts one digital I/O card to allow eight digital inputs and a total of eight digital sends.

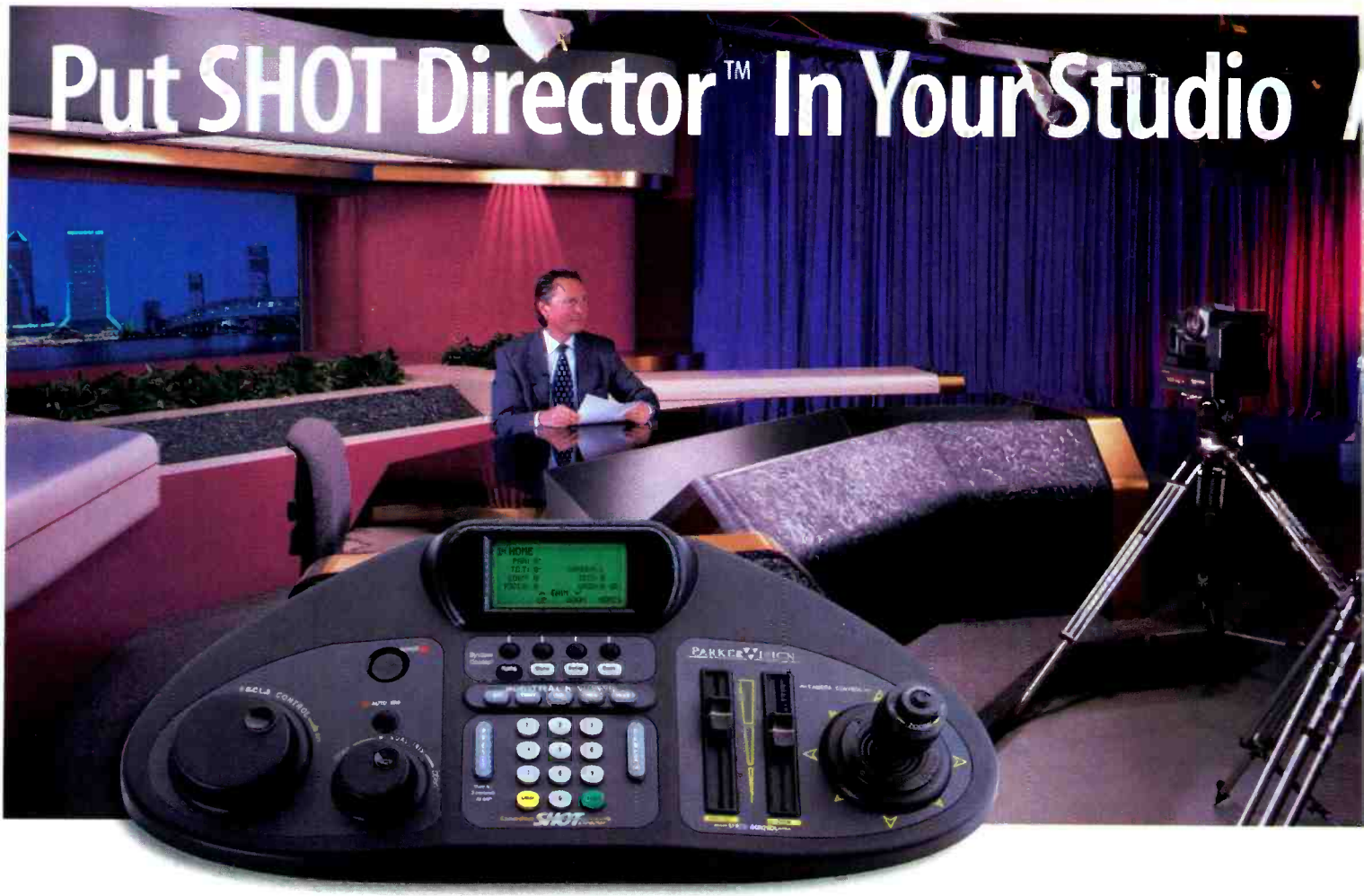
The MX12/4 bus mixer features 12 inputs, each with peak indicators, eight inputs are mono, with balanced XLR-type mic inputs, as well as quarter-inch TRS jacks for balanced and unbalanced inputs. The other inputs are configured as stereo channels with quarter-inch TS connectors to accept two-channel sources. The mixer is equipped with 48V phantom power for all XLR inputs.

The REV500 reverberation unit offers tremendous power using the first application of Yamaha's third-generation DSP chip, resulting in dense reverb and smooth decay. The unit features 20-bit A/D-D/A converters for high dynamic range and extremely low noise.

Yamaha Corporation of America, 6600 Orangethorpe Ave., Buena Park, CA 90622; 714-522-9011; E-mail info@yamaha.com; Internet www.yamaha.com

Circle (1367) on Free Info Card

Put SHOT Director™ In Your Studio



SNEAK PEEKS



Pacific Research & Engineering will unveil Integrity, its new digital on-air broadcast console. The stylish, state-of-the-art console provides a pure digital signal path, while adding new features and functionality made possible by the console's unique architecture. A computer at the heart of the system allows you to easily reconfigure and even automate console settings and functions.

PR&E, 2070 Las Palmas Dr., Carlsbad, CA 92009; 619-438-3911; fax 619-438-9277; info@pre.com; www.pre.com

Circle (1368) on Free Info Card

A video editing system that supports SDI digital video and AES/EBU digital audio communications protocols has been introduced by Truevision. The TARGA 2000 SDX is based on the TARGA 2000 RTX and includes dual M-JPEG codecs for real-time, full-resolution effects processing at up to 300kB per frame. Support for SDI means video professionals can interface desktop video systems with other SMPTE 259M-compatible equipment.

Truevision, 2500 Walsh Ave., Santa Clara, CA 95051; 1-800-522-8783; fax 800-522-8783; Internet www.truevision.com

Circle (1369) on Free Info Card



Digital Vision is launching its MV345 MPEG-2 broadcast video and audio system. It is designed for applications requiring the distribution of signals based on picture coding according to MPEG-2 MP@ML using 4:2:0 resolution and for higher quality demands using 4:2:2P@ML. Also, look for the AC724-Re724 broadcast audio codec.

Digital Vision, Upplagsvagen 1-5, S-11743 Stockholm Sweden; +46 8 182465; +46 8 182466; 100316.1467@compuserve.com

Circle (1370) on Free Info Card

The WEATHERproducer from Weather Services International (WSI) is a totally integrated data-to-graphics workstation. New forecast and programming services, such as automated show building and a suite of broadcast imagery, means WSI can help stations deliver world-class data, computer forecast modeling and entertaining, informative graphics right up to broadcast time. By bringing all weather systems and sources together with advanced graphic capabilities, the workstation can generate reliable, show-quality presentations ready for broadcast with the touch of a button.

Weather Services International, contact Lisa Dempsey at 508-670-5111

Circle (1371) on Free Info Card

Get A Grip On Camera Control.

CameraMan® SHOT Director, from ParkerVision, puts control of the studio environment right in your hands. One fully integrated unit gives you everything you need to operate and adjust up to 16 CameraMan



One SHOT Director® allows you to control up to 16 1-chip or 3-chip CameraMan® cameras.

cameras. Joystick, LCD display, CCU control, and more – it's all there. Now with less equipment and manpower, you can run a fully functional, multi-camera studio. SHOT Director is the beginning of ParkerVision's CameraManSTUDIO™ product line and is fully upgradeable to meet

your future needs. Get a handle on all that SHOT Director can do. Call 1-800-532-8034 or 1-904-737-1367 to schedule a test drive today.

CameraMan® **SHOT Director**

Features:

- Menu-driven LCD display with real-time status indicators
- Speed-adjustable joystick pan, tilt, and zoom
- On-the-fly CCU control for up to 16 cameras
- Patented autoTRACK™ technology*
- Up to 15 autoTRACK Views™ *
- Auto iris
- Focus control
- Store and recall location presets
- Serial RS-485 system communications
- Inter-camera distances of up to 2500 feet

*On autoTRACK models.

PARKER VISION®
Visibly Better.™

© Registered Marks of ParkerVision, Inc. ® Trademarks of ParkerVision, Inc.

Circle (98) on Free Info Card

See us at NAB Booth #S5475

Visit our website at <http://www.parkervision.com>

www.americanradiohistory.com



Our new video patch will have you all jacked-up for the future.

See us
at NAB
Booth #11958

With all the new video formats, it only makes sense that the jacks you buy today accommodate your needs both now and into the future. ADC's new line of standard and mid-size video jacks features 2+ GHz bandwidth and a revolutionary sealed switch design that *eliminates* dust, dirt and more importantly, RFI.

So, meet the jack of *all* formats, present and future. Call us for more information today at 800 726-4266.

ADC Telecommunications

W W W . a d c . c o m

Circle (99) on Free Info Card

Why Wait for the Future?



millenniumM-Phone Is Here Now!

"Flyaway" Global Mini-M for Voice, Fax and Data

- Remoteable Flip-up Antenna
- AC/DC Battery Power
- Less than 5 Lbs./Notebook PC Size

"Communicate With Us"

LandSea Systems, Inc.

Satellite Communications

TEL: 757.468.0448 FAX: 757.468.0625
email: landsea@series2000.com

Visit us at NAB Booth I 3745

Circle (100) on Free Info Card

SNEAK PEEKS



Viewgraphics has announced the Dynamo MediaPump, a full line of cost-effective PCI bus interfaces for MPEG-2 digital broadcast servers. The interfaces provide a variety of MPEG-2 signal interface options and a comprehensive set of tools for application vendors and system integrators to store and forward MPEG signals using open platform servers. Upon input, demultiplex transport streams and store selected PES, capture PSI, NIT and CAT, analyze and validate transport and PES streams.

The Dynamo VideoPump is a full bit-rate PCI plug-in digital video interface for Silicon Graphics, DIGITAL and Windows NT platforms. It has a built-in machine controller and provides frame-accurate real-time serial digital video interfacing for the computer system to any external device.

The Dynamo MediaTransformer is a stand-alone unit for unattended delay and transformation from one MPEG-2 interface type to another. This versatile device provides up to seven different MPEG-2 interfaces for transformation from one type to another or a two-channel single-type interface for short duration time delay. Each MediaTransformer signal path provides 64MB of buffer memory that can be programmed for delays of variable duration.

The Dynamo PowerPack provides a five-slot multistream delay-ing format converter. Each slot provides a two-channel single-type physical interface. Any reconfiguration involving up to five different format modules is supported.

Viewgraphics Inc., 1340 Space Park Way, Mountain View, CA 94943; 415-903-4900; fax 415-969-6388; E-mail info@viewgraphics.com; Internet www.viewgraphics.com

Circle (1372) on Free Info Card

Graham-Patten will showcase the D/ESAM series digital edit suite mixers, including many enhancements to the D/ESAM model 200 and model 400 that were formerly available only on the high-end model 820. Both models now incorporate fader limits, user configuration registers and D/ESAM IV protocol. In addition, the cost-effective D/ESAM 200 now features send outputs, monitor submixer, D/MEM write protection and an Ampex Ace 200 editor interface.

Graham-Patten, P.O. Box 1960, Grass Valley, CA 95945; 916-273-8412; fax 916-273-7458;

Circle (1373) on Free Info Card



VistaCom is introducing the VCI-10.GTi, a video codec on a single PC board that is capable of operating at 2MB/s and provides true 30fps. When installed in a regular PC, video can be transmitted over digital phone lines at VHS-quality level. The codec can use T1, primary rate ISDN line interfaces or the emerging ATM network to deliver the quality image for even 28-inch or larger screens. The codec conforms to international standard H.320 enabling compatibility to other H.320 terminals. The codec has built-in software-controlled video switch for three video inputs and enabling selection between several cameras. Inputs may be either composite or Y/C. The codec takes only one PC ISA bus slot. All computing power resides on the board.

VistaCom, 20431 Stevens Creek Blvd. Suite 240; Cupertino, CA 95014; 408-253-5165; fax 408-253-5170

Circle (1374) on Free Info Card

"Today, TV Stations Have To Be Future-Proof."

Full digital
transmission
system

4:3 aspect ratio
easily switchable
to 16:9 at the
touch of a button

Single
LSI processor

13 to 18 bit
digital processing

Tom Bohr
VP, Engineering and Production Operations
Maryland Public Television
On The Set Of *Wall Street Week with Louis Rukeyser*

Hitachi Digital Cameras Help Maryland Public Television 'Stay Ahead Of The Curve.'

Tom Bohr feels the change from 4:3 analog to 16:9 digital technology "will be a revolution every bit as big as black-and-white to color. And since we don't know what the standards will ultimately be, we must start to future-proof now."

As he invests in new technology, Bohr looks for upgradeability on each piece of equipment. That's one reason he purchased eight Hitachi digital cameras. The SK-2000 Series has four built-in upgrade paths, from the single LSI processor, and AD converter, to the newest CCD block technology.

"As the fourth largest producer of PBS shows, MPT creates programs with very long shelf lives—which makes 16:9 digital capability crucial. So we needed a camera that was digital from the head all the way through the CCU. I personally visited all the factories and trade shows, and I found Hitachi to be two years ahead of the competition.

"Today, we use Hitachi digital cameras for all our studio productions. We're very pleased—we believe this is the best purchase for MPT today and well into the next century."



Hitachi
SK-2000

Built-in upgrade
paths

Precision digital
file transfers

Six-vector color
corrector and
true linear
matrix operating
simultaneously

Not just digital,
Hitachi digital.

HITACHI

Hitachi Denshi America, Ltd.
Hitachi Denshi, Ltd.

New York (516) 921-7200 Atlanta (770) 242-3636 Los Angeles (310) 328-6166
Dallas (817) 488-4528 Chicago (708) 250-8050 Canada (416) 299-5900

Circle (10) on Free Info Card

www.americanradiohistory.com

SNEAK PEEKS

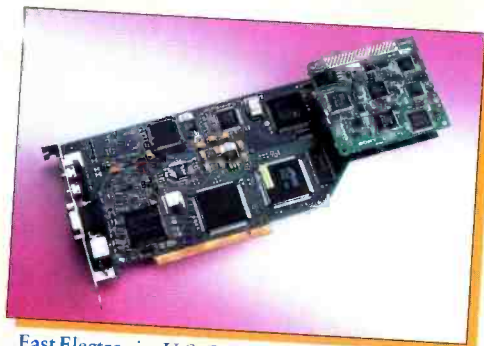


In addition to celebrating 20 years in the industry, **Multidyne** will be showing several new products such as the FTX-195/FRX-195 fiber optic stereo audio and digital AES/EBU transmission system. The system supports digital audio transmission for the AES/EBU, IEC958, S/PDIF and EIAJ CP-340 formats. The FTX-195 system is optionally available with up to two auxiliary data channels for RS-232C, RS-422 or CMOS. The system can also support up to two 10Hz to 5kHz auxiliary audio channels.

Multidyne, 191 Forest Ave., Locust Valley, NY 11560;
800-488-8378 or 516-671-7278; fax 516-671-3362;

info@multidyne.com; www.multidyne.com

Circle (1375) on Free Info Card



Fast Electronics U.S., Inc. is premiering its real-time DV editing solution, the DV Master. With its real-time capabilities, the PCI bus master device features a FireWire (IEEE 1394) interface that allows direct transmission and playback of video and audio to/from a computer hard drive in real time. The DV Master also features a Sony hardware codec with the ability to process video in real time.

Fast Electronics, 333 Vintage Park Dr., Foster City, CA 94404; 415-295-3500; fax 415-345-3447;
www.2FAST4U.com

Circle (1378) on Free Info Card



A new Folio F1 from **Spirit** is a versatile mixer ideal for practically any small- to medium-scale mixing task. It is available in 16/2 or 14/2 input versions with eight or six mono channels. It is packed with larger console features, such as 100mm tapered faders, global +48V phantom power supply and three auxiliaries with aux masters and AFL. The mixer's mono channels all use the UltraMic pre-amp, which provides up to 60dBu of gain and a headroom of 22dBu. Each mono input also features three-band EQ with a sweepable mid, three auxiliaries, 18dBu per octave bypass filter, pan, mute and PFL.

Also being introduced are the bi-amplified Absolute 4P system and the Folio PowerPad, Spirit's smallest and most affordable powered mixer. The FolioPowerPad measures 9.6" W x 9" D, and features four XLR mic inputs, four mono one-quarter-inch inputs and two stereo inputs.

Spirit by Soundcraft, Inc., 11820 Kemper Rd, Auburn, CA 95603; 916-888-0488;
fax 916-888-0480

Circle (1380) on Free Info Card



Among the cable products being shown by **Gepco International**, you can find the 7537 Super Trunk. In addition to being color coded, the cable features alphanumeric identification and is available in bundles of 5, 10, 12 and 25. Other features include up to 50 channels of AES audio that can run 2,200 feet in length and short-run distribution of video.

Gepco, 2225 W. Hubbard St., Chicago, IL 60612;
800-966-0069 or 312-733-9555; fax 312-733-6416

Circle (1376) on Free Info Card

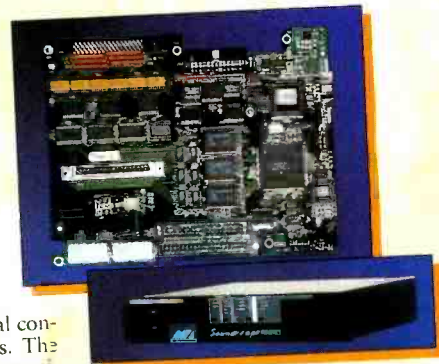
SSAC-1 Accelerator card from **Soundscape** is retrofittable to all existing Soundscape systems. The plug-in DSP card adds several times the audio processing power of the existing system, while adding eight channels of I/O in the form of a TDIF port. An upgraded Soundscape will have 10 inputs and 12 outputs.

The SS8I/O rack unit is a 19-inch 2U rack unit that will also connect to the SSAC1 TDIF port.

It comes fitted with 20-bit Crystal converters and balanced XLR jacks. The front panel features eight bar graph meters and routing controls for any combination of analog or digital in or out. Alongside the TDIF port the SS8I/O also features an ADAT optical interface, which will allow digital connection of Soundscape and ADAT, ADAT/TDIF translation and improved audio quality when SS8I/O is used in place of ADAT's own converters.

Soundscape Digital Technology Inc., 4478 Market St., Suite 704, Ventura, CA 93003; 805-658-7375; fax 805-658-6395; E-mail kdewar@sydec.be

Circle (1377) on Free Info Card



The Eimac Division of **Communications & Power Industries Inc.** has added two new Klystron IOTs to their line of UHF TV transmitter vacuum power amplifiers. The new models are designed for analog or digital transmission and are conservatively rated for 32kW (K230W) and 43kW (K240W) when operated in visual service. The original K2 IOT, the K260W, is rated for 64kW visual service and has been optimized for digital transmitter usage.

CPI, 301 Industrial Way, San Carlos, CA 94070; 415-592-1221;
fax 415-592-9988

Circle (1379) on Free Info Card

Anchor Communications will be exhibiting the new PBS-100. This portable DC battery supply unit is for PortaCom wired intercom systems. It operates 8-10 headset stations for up to six hours using six D-cell batteries.

Anchor Communications, 3415 Lomita Blvd., Torrance, CA 90505;
800-262-4671; fax 310-784-0066

Circle (1413) on Free Info Card

You can't check *AES/EBU* digital interfaces or cabling with a distortion.....even if it's *digital*

"THE DSA-1 HAS SAVED US IMMENSE TIME DURING TESTING AND INSTALLATION OF OUR NEW BROADCAST CENTRE. IT IS THE ONLY HAND-HELD ANALYZER THAT CAN MAKE THE MEASUREMENTS WE NEED"

TOKYO BROADCASTING SYSTEMS TOKYO, JAPAN

"SPACE FACILITIES IS A NETWORKED DIGITAL AUDIO STUDIO COMPLEX, SO WE NEED THE FINEST TOOLS. THE DSA-1 MEETS OUR REQUIREMENTS EXACTLY."

SPACE FACILITIES LTD, LONDON, UK



The Prism Sound DSA-1 AES/EBU interface test system provides *unique generator and analyzer* capabilities enabling the *most comprehensive* assessment of AES/EBU interconnections.

For example, the DSA-1 can measure differences between *source and cable jitter*, or it can *simulate* either sort with its *generator*. These are just some of the capabilities of the DSA-1 which enable thorough testing of AES/EBU outputs, inputs, distribution and cabling.

See us at NAB Booth #S5777

To find out more, call or fax us now for a full information pack, or look up the latest DSA-1 V2.0 specification at our web site.

Prism

PRISM MEDIA PRODUCTS, INC.
115 ROUTE 46, B-16
AMERICAN EXPRESS BUILDING
MOUNTAIN LAKES, NJ 07046
TEL: +1 201 299 7790
FAX: +1 201 299 7759

WEB PAGE: <http://www.prismsound.com>
e-mail: sales@prismsound.com

Circle (86) on Free Info Card

"THE MEASUREMENT CAPABILITIES AND THE PORTABILITY OF THE DSA-1 MAKE IT AN ESSENTIAL TOOL"

CHANNEL 4 TELEVISION,
LONDON, UK

"THE CABLE AND SOURCE JITTER MEASUREMENTS AND THE NEW GENERATOR MAKE THE DSA-1 AN INDISPENSABLE TOOL ON SITE AND IN THE LABORATORY"

BAYENSCHER RUNDFUNK,
MUNICH, GERMANY

SNEAK PEEKS



All the way from Switzerland, **NAGRA Kudelski** is showing the NAGRA-D digital audio recorder and the NAGRA ARES-C solid-state recorder. The NAGRA ARES-C is a portable mono/stereo machine, with a mono recording time of 40 minutes on a 20MB PCMCIA card, with onboard copying and editing, G722 or MUSICAM ISO/MPEG Layer II compression and standard telephone output. ISDN output is optional.

**NAGRA Kudelski, Route de Geneve 22, CH-1033 Cheseaux
Switzerland, +41 (0) 21 732-0101; fax +41 (0) 21 732-0100;
owens@nagra-kudelski.ch; www.nagra.com**

Circle (1381) on Free Info Card



TBC Consoles will be displaying the FreeForm and Modular console designs for all non-linear systems including, Avid 8000, Stratosphere, Flint, HAL and Flame. The Modular consoles are functional, practical and adjustable components for specific systems and work spaces. The FreeForm consoles are highly stylized with an emphasis on curvilinear shapes and furniture-grade materials. Desktop surfaces are offered in a variety of styles to work with your application and individual preference.

**Time Base Consoles, Inc., 115 Cabot St., W. Babylon, NY 11704;
516-293-4068; fax 516-293-4075; E-mail tbc@pb.net;
CompuServe 74427,3326**

Circle (1383) on Free Info Card

TRF Production Music Libraries is introducing its MUSICTRACK production music library. It is a diversified collection of background and theme music written by outstanding composers and recorded by some of the finest musicians in the world. The music has been produced to meet the demands of those who produce and create television, radio, film, AV and multimedia productions. The selections are available in several versions including full length and jingle length, as well as short strings/links and alternate mixes to allow the user to have a range of musical choices. Each disc is accompanied by a self-opening comprehensive booklet with complete descriptions and timings of all tracks. Selected discs can be received on approval. A free music sampler and catalogs are available.

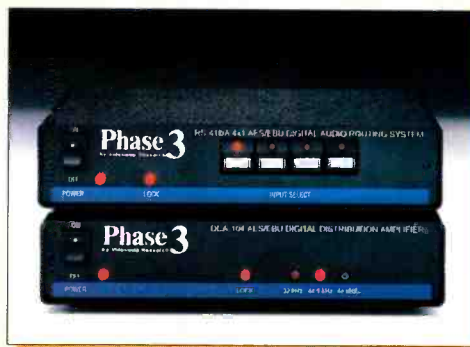
**TRF Music Inc., 747 Chestnut Ridge Rd., Chestnut Ridge, NY 10977;
800-899-MUSIC; fax 914-356-0895**

Circle (1384) on Free Info Card

The innovative CS-1000 spectroradiometer by the **Minolta Corporation**, Instrument Systems Division, measures display color and contrast. The spectroradiometer features high speed and high accuracy. Weighing only 10.4 pounds, the instrument is truly portable and the Windows-compatible data processing software allows for easy calculation, statistical analysis, data storage and print-out.

**Minolta, 101 Williams Dr.,
Ramsey, NJ 07446;
201-818-3517; fax 201-825-4374;
www.minoltausa.com**

Circle (1386) on Free Info Card



AES/EBU digital audio signal. Both units feature transformer-coupled inputs and outputs to improve common-mode rejection over longer transmission line lengths. In addition, a PLL-based receiver allows clock recovery and regeneration, and a relocked datastream is generated at the output. All audio connectors are the locking 3-pin XLR type.

**Videoquip Research Ltd., 4-595 Middlefield Rd., Scarborough, Ontario, Canada
M1V 3S2; 416-293-1042; fax 416-297-9377; E-mail atomizer@eagle.ca.**

Circle (1387) on Free Info Card

Video Authoring Systems Group (VAS) is introducing SMPTE 259M video outputs for its RTC scan converter and HD3:2 HDTV downconverter. The SMPTE 259M outputs provide breakthrough video detail and clarity from the converted high-resolution computer or HDTV video. The digital outputs complement the RTC's proprietary all-digital conversion process. Because the signal remains in its digital form, signal degradation due to digital-to-analog conversion is avoided. The outputs are available as an option for new buyers or as an upgrade for existing RTC owners. The digital encoder board replaces the RTC's analog video board and provides four serial outputs and one parallel output. The outputs are 4x oversampled and include 4:2:2 and 4:4:4 signals. The AD4x analog component to digital video converter features 4x oversampling, anti-aliasing filtering; full 10-bit throughput; 4:4:4 or 4:2:2 digital outputs; gamma correction for adjustment of input color levels; RGB/Betacam outputs in addition to SMPTE 259M video outputs. The converter also has an advanced filtering and conversion technology to present a clean artifact-free video picture.

**Video Authoring Systems Group, Inc., 4531 Empire Ave.,
Burbank, CA 91505; 818-843-4831; fax 818-843-6544;
E-mail info@vasgroup.com; Internet www.vasgroup.com**

Circle (1382) on Free Info Card

The ON-LINE EXPRESS from **United Media** is a digital non-linear editing system. It is a flexible digital editing and media production system with real-time performance. It operates under Windows NT and uses Matrox's DigiSuite PCI bus boardset and interfaces with the high-speed Movie2 bus. The system empowers you with a complete solution to easily create, share and organize digitized video, audio and special effects. It also includes an intuitive drag and drop timeline interface and the power to adapt to different methods of operation. The system supports instant playback of edits, real-time effects, no rendering, real-time audio mixing, 2-D and 3-D digital video effects, paint, titling, compositing and batch digitizing.

**United Media, Inc., 4771 E. Hunter, Anaheim, CA
92807; 714-777-4510; fax 714-777-2434;
E-mail umi@unitedmediainc.com**

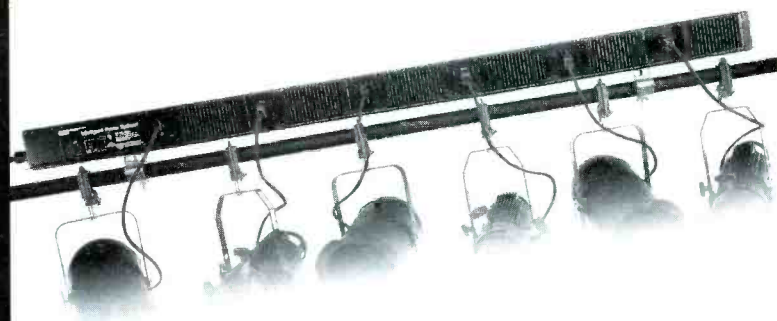
Circle (1385) on Free Info Card

As part of its Phase 3 line of professional audio and video products, **Videoquip Research Ltd.** is announcing two AES/EBU digital audio devices. The DDA-104 is a one input, four output DA for AES/EBU digital audio signals. Front-panel indicators show the presence of a valid AES/EBU signal and the sampling rate (32, 44.1 or 48kHz). The RS-41DA is a 4x1 routing switcher for AES/EBU digital audio. Inputs may be selected using the front-panel switches or via the remote-control connector. A front-panel lock status indicator confirms the presence of a valid AES/EBU signal at the output. Output switch timing is synchronized with the Channel A preamble of the incoming

NOT
A LOT
HAS
CHANGED
IN
LIGHTING
TECHNOLOGY
IN
THE
LAST
40
YEARS...



...UNTIL NOW!
THE NEW
IPS DIMMER SYSTEM.



UNCONVENTIONAL,
QUIET,
COOL,
LIGHTWEIGHT,
COMPACT.



Circle (87) on Free Info Card

For More Information Call: 1-800-223-9477

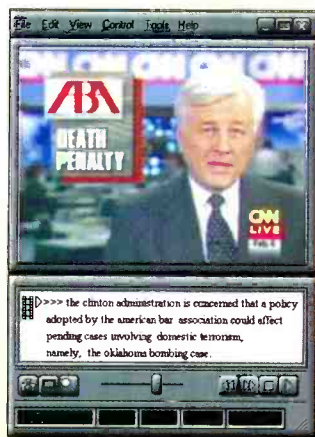
SNEAK PEEKS



Tascam will be shipping its four-track MD 564 digital Portastudio by NAB. The MiniDisc recorder provides random access functions including instantaneous locate capability, copy, move, erase and bounce forward. The Portastudio has auto punch in/out with rehearsal, three-band EQ with sweepable mids, two aux sends, four mono channels, four stereo channels, balanced XLR inputs for use with high-quality, professional, low-impedance mics and a rotary control for job and data entry functions.

**Tascam, 7733 Telegraph Road,
Montebello, CA 90640; 213-726-0303**

Circle (1389) on Free Info Card



A software product that enables video streaming in real time over the web is being introduced by **Televisette Systems Inc.** The accessTV SmartFrame Streamer uses real-time scene detection to create a slide show view of video footage. It is designed for low-bandwidth applications and low-capacity storage. It features SGI, Windows 95 and NT platforms, Firewall support, variable bit rates and live encoding.

The accessTV with MPEG-I support is a suite of multimedia products that allows you to search, capture, edit and distribute live or stored video information as easily as text. It supports Windows 95 and NT platforms, monitors television minute-by-minute, word-for-word 24-hours a day, customized search profiles that find only the information you need and searches, records, stores and retrieves video information.

**Televisette Systems Inc., 603 March Rd., Kanata,
Ontario, Canada K2K 2M5; 613-599-3648; fax 613-599-3645; E-mail info@televisette.com**

Circle (1391) on Free Info Card

Vertex Antenna Division, a division of Vertex Communications, has developed a 9.3-meter compact Cassegrain antenna for C-, X- and Ku-bands to offer superior performance for worldwide receive-only and transmit-receive applications. A major feature of reflection installation is the provision for non-optical alignment. Highly controlled manufacturing tolerances allow for full interchangeability of any reflector component. All C, X and Ku reflector models have all-aluminum panels, hub and a rigid welded truss backup structure. The elevation-over-azimuth steel kingpost pedestal provides the stiffness required through the entire travel range. The antenna meets FCC regulation 25.209, Eutelsat requirements for antenna pattern and polarization discrimination.

Also being introduced is the lightweight 1.2-meter mobile antenna designed for worldwide transmit and receive operation in Ku-band. It is a transportable antenna that consists of a single-piece carbon fiber composite reflector and support structure mounted on a lightweight elevation-over-azimuth positioner. The complete antenna system, including a single feed, can be interfaced with most lightweight vehicles for mobile SNG applications.

The lightweight 2.2-meter flyaway antenna is portable and consists of a carbon fiber composite reflector and aluminum support structures. Repeatability is maintained with precision registration of the nine reflector segments and the feed support structure. The complete antenna system, including a single feed, is packaged in six robust portable cases.

**Vertex Communications, 2600 Longview St., P.O. Box 1277, Kilgore, TX 75662; 903-984-0555;
fax 903-984-1826; E-mail jjimena@kilgore.net**

Circle (1393) on Free Info Card

Staco Energy Products is introducing the SVR stepper voltage regulator. It is microprocessor-controlled providing +/-0.25% to 1% or better output voltage regulation with full range correction in less than one second. The SVR is available in ratings from 2.5 to 15kVA, as a compact 19-inch rack-mounted unit or as an enclosed, indoor, ventilated unit for bench or floor mounting. The output voltage regulation set point is adjustable through the front-panel potentiometer or the SVR can be interfaced with a programmable controller providing a 0 to 5VDC set point signal.

Also from Staco, the Motor Start option will start one horsepower per 1kVA of rating, after the power fails, without switching to bypass. TLC battery charging, remote diagnostic testing and systems engineering give these uninterruptible power sources unmatched reliability.

Staco, 301 Gaddis Blvd., Dayton, OH 45403;

937-263-1191; fax 937-263-1723

Circle (1388) on Free Info Card

Equi=Tech is introducing the Model ET1R balanced power AC rack system designed to eliminate ground noise in a variety of audio/video and broadcast applications. The 1,000W ET1R is ideal for use in portable sound carts, mobile broadcasting, ENG, STL, location recording and other applications. Using balanced power in the signal chain can greatly improve image quality and remove noise from all broadcast and video signals.

**Equi=Tech, #S-1065, Selma, OR
97538; 541-597-4448; fax 541-597-4099; rp@equitech.com;
www.equitech.com**

Circle (1409) on Free Info Card



The **Advanced Video Designs' HR1440** telecine system has gained widespread industry acceptance. Providing double the horizontal resolution of conventional telecines, the system features 8:8:8 10-bit video, 12MHz bandwidth, multiple analog and digital video outputs, digital deflection, digital servo, enhanced optics and a wealth of electrical and mechanical upgrades.

Advanced Video Designs, 2310 W. Victory Blvd., Burbank, CA 91506; 818-562-1653; fax 818-562-3342

The latest scoop from **Telos Systems** is the Audioactive Internet audio suite. It has all the pieces needed for a complete Internet audio broadcast chain, including encoding systems, audio server and client software. It uses world-standard MPEG Audio Layer III coding. Audioactive makes real-time streaming audio and stored audio files accessible via a web browser and the decoder software. Audioactive requires a PC sound card and Power Macintosh-equipped web surfers to download a free Audioactive player in order to listen to live web casts. Audioactive supports NetShow 1.0 and Windows NT Server 4.0. It is also compatible with Macromedia's Shockwave plug-in and Shockwave audio standard.

Telos Systems, 2101 Superior Ave., Cleveland, OH 44114; 216-241-7225; fax 216-241-4103

Circle (1392) on Free Info Card

Seven Different Formats . . .



One Worldwide Standard.



Every new video format has one standard in common... Anton/Bauer. All these new camcorders have exclusive Anton/Bauer features as original equipment – Gold Mount bracket, InterActive viewfinder fuel gauge, Ultralight Automatique circuitry, Digital Battery.

Isn't it good to know there is one standard that will always be there?



The worldwide standard

See us at NAB Booth #10728

For information call (203) 929-1100 or fax (203) 929-9935

Circle (88) on Free Info Card

SNEAK PEEKS



Sprocket Digital announces the CARNIVAL upgrade for Cintel URSA and URSA Gold telecines. The upgrade combines true systems engineering with computer simulation to produce high-performance video processing and A/D conversion system. The system adds analog Burn Correction to the URSA, as well as adjustable RGB channel timing, afterglow correction, film element shading and CRT spot aperture correction.

Also watch for the RG177D digital reticle generator. It uses ITU-R 601 serial digital video and generates any SMPTE standard or user-defined aspect ratio for standard 4x3 and advanced TV 16x9 formats.

Sprocket Digital, P.O. Box 4086, Burbank, CA 91503; 818-566-7700; fax 818-566-4477

Circle (1394) on Free Info Card

Shively Labs is offering a high-power UHF antenna in power ratings from 30kW to 150kW, with lower power ratings available. Features include a fine-matching transformer, gas stop and elbow complex, and DC grounding for lightning protection on each antenna. Horizontal polarization is standard with elliptical polarization available. Beam tilt and null fill are standard. The UHF antenna is constructed of aircraft-grade aluminum and copper with a rugged, UV stabilized high-density polyethylene radome for optimal weight and windload performance.

Shively Labs, P.O. Box 389, Bridgton, ME 04009; 207-647-3327; fax 207-647-8273; E-mail sales@shively.com; www.shively.com

Circle (1395) on Free Info Card



The A-51T Dual EXP fully integrated dual-expandable network-quality digital production trailer will be shown by Shook Electronics USA, Inc. The truck is a turnkey project for TCI subsidiary National Digital Television Center and is equipped with Ikegami HK-388 cameras, GVG 4000 SDI production switcher, Telecast Fiber System audio feed, Sony DVW 500 digital Betacam and Tektronix Profile disk recorders, all with 4:3/16:9 aspect ratio switching capability. A motorized system for deploying and stowing the side and rear expansion sections eliminates hand-cranking.

Shook will also exhibit an A-11 ENG rack-ready microwave van with a custom remote-controlled microwave system.

Shook Electronics, 18975 Marbach Ln., Bldg. 200; San Antonio, TX 78266; 210-651-5700; fax 210-651-5220.

Circle (1397) on Free Info Card

The HDK-790 is Ikegami's top-of-the-line full digital HDTV studio camera for broadcast use. It features 3 1/3-inch CCD image sensors each with 2,000,000 pixels. With a downconverter/upconverter built into its CCU, the HDK-790 supports not only traditional NTSC broadcasting but also HDTV. The camera also incorporates newly developed digital processing ICs to implement all-digital image processing. It achieves full-digital HDTV implementation, boasting a wide variety of digital-specific features and functions.

Another product from Ikegami to watch for is the Editcam disk camera recorder.

Ikegami, 37 Brook Ave., Maywood, NJ 07607; 201-368-9171; fax 201-569-1626

Circle (1398) on Free Info Card



Orban will be showing its new AirTime on-air delivery system that is particularly suited to demanding, traffic intensive TV broadcast applications. This operating system is specifically designed for real-time multitasking network applications and easily accommodates consolidated multistation operation in live assist or automation modes. AirTime also offers a choice of four hardware interfaces for adapting operations to different work habits.

Orban, 1525 Alvarado St., San Leandro, CA 94577; 510-351-3500; fax 510-351-0500; custserv@orban.com

Circle (1396) on Free Info Card

Now you can have uplink capability in analog and digital formats with the TEC-19 MICRO-SAT from Television Engineering Corporation. The Ford E350 supercargo van features a 6.5kW or 7kW generator, dual battery system with isolator, digital metering power distribution panel, 25-foot shore cord, 40A battery charger; inverter power with auto switching. Additional equipment includes an IFB-19A IFB controller, antenna pan and tilt with pushbutton control, exterior lighted video, audio, IFB and phone connection panel, off-air VHF-UHF antenna, Will-Burt pneumatic mast with padded cover, roof deck of expanded metal or treadplate, separate VTR cabinet with storage shelves, four equipment racks, high volume pneumatic compressor, roof-mounted air-conditioning unit, manual cable reels with quick removal feature and rear storage compartment and storage drawers.

Television Engineering Corporation, 101 Industrial Dr., Sullivan, MO 63080; 573-860-4700; fax 573-860-4600

Circle (1399) on Free Info Card



Now you may have an extra 30 seconds of commercial time every hour thanks to the Prime Image Time-Machine. This product can manipulate time in either direction by changing the length of audio and video in such a way that there is minimal to no impairment or alteration of the sound or picture. There is no need for preprocessing or prerecording because the device works in real time. The time-changed program can even be mixed and switched with media running at normal speeds. The time change can be stopped and restarted to protect timed segments that you don't want to change.

Prime Image, 19943 Via Escuela, Saratoga, CA 95070; 408-867-6519; fax 408-926-7294

Circle (1400) on Free Info Card

Aysis from Solid State Logic provides a flexible, futureproof and cost-effective solution for applications where space is limited but high-quality multichannel digital audio is essential. Aysis harnesses a powerful proprietary digital technology in a dedicated digital production system. The Aysis console employs Axiom's Channel Banking, enabling any bay to control a second bank of channels with a single push of a button. "Sweet Spot" access swaps control of peripheral bays to a central location so that the operator can retain an optimum listening position.

Also being introduced are the Axiom all-digital production system, the SL 9000 J series consoles and the G+ Special Edition.

Solid State Logic Ltd., Begbroke Oxford, OX5 1RU England; +44 (1) 865 842300; fax +44 (1) 865 842118; E-mail judithp@solid-state-logic.com

Circle (1401) on Free Info Card



Big News About Something Small



The CPI Compact Satcom MPA

Our new Compact Medium Power Amplifier (CMPA) is big news in the portable satcom market. It's ideal for SNG, flyaway and small earth terminals.

The CMPA packs high efficiency in a 5.25" single rack drawer.

The amplifier is also easy to use, featuring microprocessor control. Digital and analog control interfaces make the CMPA a snap to integrate into the system. Plus, it's easy to maintain with modular construction and built-in fault diagnostics — all in a rugged design that can stand up to a world of conditions.

And, as with all CPI amplifiers, the CMPA is backed by the industry's largest sales and global service network.

No matter where in the world your story breaks, CPI's CMPA will be there transmitting the news.

Give us the opportunity to tell you more. Call us at:

Tel: (415) 846-2800 Fax: (415) 424-1744
e-mail: marketing@satcom.epii.com
www.epii.com/satcom/
811 Hansen Way • P.O. Box 51625
Palo Alto, CA 94303

Circle (89) on Free Info Card

www.americanradiohistory.com



**SEE US AT NAB
BOOTH #5604**

CPI
Communications & Power Industries

SATCOM DIVISION

formerly
varian VFA **mep**

SNEAK PEEKS



New digital products are being introduced by **Pixel Instruments Corporation**. The PC Clip-store is a low-cost system for the capture and replay of serial digital video clips and stills. Based on a proprietary PCI bus JPEG board, the three onboard frame buffers provide picture handling flexibility. The compression ratio is user-selectable, allowing the storage requirements to be optimized to specific applications. Also new from Pixel, look for the DD3100D digital video delay detector and the AD3000 audio delay synchronizer.

Pixel Instruments, 718 University Ave., Suite 210, Los Gatos, CA 95030; 408-354-9122; fax 408-354-0122

Circle (1402) on Free Info Card



LITTLE RED, a device from **Skotel**, converts linear time-code to RS-232 serial data. Self-powered from the RS-232 port, this micro-sized reader is the ideal LTC input to a PC, as well as a Mac or an SGI. Its capability to read 24, 25, 30 and 30 drop frame time-codes allows it to work on film or video for logging, time stamping, timing, time-code verification, computer clock synchronization, automation control and many other applications. Four opto-isolated GPI outputs trigger at user-selectable times to enable the reader to control multi-event sequences.

Skotel, 5695 chemin Saint-Francois Saint-Laurent, Quebec, Canada H4S 1W6;

+1 514 333-7989; fax +1 514 333-6914; E-mail 72052.73@compuserve.com

Circle (1403) on Free Info Card



The recently FCC-approved UDR200B wireless microphone system from **Systems Wireless**, permits user access to 256 frequencies. A tracking front-end preserves the selectivity you expect from a fixed-frequency design, while adding the versatility of frequency agility to deal with potential RF interference. An auto-search spectrum analyzer assists in finding appropriate frequencies to select. A preselected group of frequencies or the entire tuning range of the receiver can be scanned. A highly visible 16-character alphanumeric LED displays frequency, TV channel of operation, block number used and user-adjustable characters for custom applications.

Systems Wireless, Ltd., 465 Herndon Parkway, Herndon, VA 22070-5202; 703-471-7887; fax 703-437-1107

Circle (1405) on Free Info Card



Svetlana is showing the 3CX6000A7/YU148 power triode. It is designed with a modern mesh filament, which assures no compromise, long life performance. In addition, the tube is manufactured with high alumina ceramic doped with chromium and molybdenum. This combination results in a true metal/ceramic chemical bond and provides a stronger bond and allows higher processing temperature. High temperature bake out drives gasses from internal electrodes during vacuum processing. Clean processing means long operating life. The chromium and molybdenum-doped alumina give the tubes their distinctive appearance. Each tube is full-power RF tested at the factory in Russia.

Svetlana Electron Devices, 8200 S. Memorial Prkwy., Huntsville, AL 35802; 205-882-1344; fax 205-880-7077

Circle (1407) on Free Info Card

Studio Audio & Video Ltd. has chosen Data Conversion System's 96kHz 24-bit converters to complement the new high-resolution editing features of the SADiE3 software. The dCS 902 and 952 are reference-quality ADCs and DACs, which have been specially designed for high-speed operation. A comprehensive set of standard inputs and outputs enable these units to be used in a wide range of digital audio applications. The units use a proprietary, multibit oversampling technique that achieves outstanding low differential non-linearity.

Also, the SADiE3 software supports a DSP plug-in architecture. This concept allows third-party developers to write complementary DSP processes for the SADiE and Octavia editing systems.

Studio Audio & Video Ltd.,

+44 (0) 1353 648888;

fax +44 (0) 1353 648867;

E-mail ted.haton@sadie.com

Circle (1404) on Free Info Card



TC Electronic is now distributing DK Audio's MSD200, a compact and versatile audio tool offering phase metering, audio vector oscilloscope and level metering in a rugged metal box. An electroluminescent display provides a 160° viewing angle with exceptional high contrast ratio and brightness, and the unit can be used in broad daylight. The tool allows the operator to select either analog or digital mode. The level meter offers seven PPM scales, as well as DIN, BBC and VU scales.

TC Electronic, 705A Lakefield Rd., Westlake Village, CA 91361; 805-373-1828; fax 805-379-2648; Internet www.tcelectronic.com; E-mail tc@tcelectronic.com

Circle (1406) on Free Info Card

Audio Video Design Inc. is formally introducing the AV10 digital flat-panel teleprompter. It comes from the factory set up for Betacam-sized units, but is universally adjustable for everything from the Sony DVC1000 to studio configuration cameras. Integrated into a carry-on-sized soft-sided case with laptop computer compartment, it can be stowed in the overhead compartment on an airliner. The panel itself operates on 9-36V DC, and includes a universal switching AC adaptor and accepts direct VGA input from IBM or Mac sources. It displays 640x480 VGA color at 300nits brightness.

Audio Video Design, 2358 Gabriel Ln., W. Palm Beach, FL 33406; 561-966-3565; fax 561-966-4095

Circle (1287) on Free Info Card





CBS USA

equipped two new remote units with CS2000 systems to broadcast live sports and entertainment programs.



Lin Productions USA

provide exclusive live remote broadcast for a major league baseball team, and other independent broadcast projects.



CCTV China

uses Euphonix consoles in five studios across China for music recording and live broadcasting.



Channel 7 Australia

uses eight Euphonix systems throughout their network for studio and remote, broadcasting and production.

Q: Why Are Euphonix Consoles the Choice of More Broadcasters Worldwide?

A: Because they...

...eliminate down time.

The Euphonix CS2000 Digital Control Audio Mixing System is the only broadcast audio console that can be completely reset in less than 1/30 of a second with the push of a button. Use it directly On-Air for multiple sets, as presets for back-to-back live or taped shows, or to instantly reset for a recurring show.

...require less space.

The CS2000's compact digital control surface fits into the tightest control rooms and remote trucks. A 40 fader console with full facilities is less than 5 ft. / 1.5 m. long! The audio electronics can be remotely located to keep the audio control booth cool and quiet.

...are prepared for the future.

Ready to meet the audio demands that HDTV will create, Euphonix HyperSurround™ provides stereo and surround panning from every channel for all surround sound formats - which can be added even after installation, "future proofing" your investment.

...deliver the best sound quality and highest reliability.

The CS2000 has superior sound quality with its analog signal paths, and complete reliability with the combination of analog circuitry, mature software and modular hardware.

For more information on Euphonix digital-control audio mixing systems for On-Air, Remote, Production, and Post Production, contact the Euphonix sales office nearest you.

Circle (102) on Free Info Card

Broadcast On-Air and Production mixing with the CS2000



**Headquarters
(Palo Alto, West US)**
220 Portage Avenue
Palo Alto CA 94306
Tel: (415) 855 0400
Fax (415) 855 0410

**Los Angeles
(West US & Int'l)**
11112 Ventura Blvd
Studio City CA 91604
Tel: (818) 766 1666
Fax (818) 766 3401

**New York
(East US)**
2 West 45th St Suite 605
New York NY 10036
Tel: (212) 302 0696
Fax: (212) 302 0797

**Nashville
(Central US)**
1102 17th Ave Suite 202
Nashville TN 37212
Tel: (615) 327 2933
Fax: (615) 327 3306

**London
(Europe)**
6 Berghem Mews, Blythe Rd
London W14 0HN
Tel: (171) 602 4575
Fax: (171) 603 6775

Euphonix
digital control audio systems
Web site: <http://www.euphonix.com>

SPECTRAL
A EUPHONIX COMPANY

Suppliers of digital audio workstations

Toll Free: 800 407 5832 Web site: <http://www.spectralinc.com>

www.americanradiohistory.com



WORD WIZ

To get you in the right frame of mind for your trek to Las Vegas, *Broadcast Engineering* has put together the WORD WIZ. Simply match words found backward, forward, up, down or diagonally to the clues on the adjacent page. Answers can also be found in the NAB EXTRA beginning on page 64. When you've completed the puzzle, mail or fax it to us at *BE*. The first 10 correct puzzles win a free *Broadcast Engineering* T-shirt. Good Luck!

From:

Company:

Phone:

M	A	E	R	T	S	A	I	D	E	M	Z	T	N	E	I	V	G	X	N	P	B
C	I	N	O	S	A	N	A	P	E	E	C	W	J	R	M	V	A	P	O	U	R
Q	H	I	T	A	C	H	I	T	E	C	H	P	T	O	S	I	E	R	R	A	A
X	Q	O	I	O	A	B	I	D	R	N	Y	R	E	C	J	D	C	E	O	T	V
C	L	E	N	O	N	L	I	N	E	A	R	O	N	N	N	E	A	S	W	T	O
L	L	D	O	H	E	B	L	P	U	I	O	F	Y	E	O	O	P	S	V	P	C
I	E	I	M	T	R	A	A	A	R	L	N	I	D	S	I	T	S	L	G	U	P
P	W	V	P	A	R	G	D	U	D	L	Q	L	O	C	T	E	V	M	W	N	E
B	S	X	C	S	E	N	N	H	E	I	S	E	R	I	A	K	I	H	O	C	G
O	O	O	V	C	T	H	O	C	U	R	N	I	C	T	T	T	S	E	H	H	U
X	R	N	B	A	S	O	C	N	O	B	R	Z	A	E	S	R	T	Q	L	N	T
D	Y	K	R	M	A	I	R	T	I	M	E	Z	H	X	K	O	A	G	E	M	O
Q	N	R	U	I	M	A	G	E	I	J	A	E	Z	G	R	N	N	R	R	L	I
N	O	I	S	I	V	N	J	B	K	E	U	R	V	H	O	I	E	R	D	S	M
W	S	V	A	A	D	N	A	R	I	M	L	F	K	J	W	X	T	H	A	T	U

Send entries to: **Broadcast Engineering**
 Attn: Jim Saladin
 9800 Metcalf Ave
 Overland Park, KS 66212
 913-967-1905, Attn: Jim Saladin

or fax it to:

CLUES:

1. The DVA320Q digital video analyzer is featured by _ _ V _.
2. _ C _ _ _ _ _ is introducing the Au-DTV15 DTV transmitter.
3. _ _ _ _ _ B _ _ _ _ is featuring the Interactive 2000 PowerChargers.
4. Quantel is featuring Paintbox and Hal graphics systems with the new _ _ _ V _ brushes package.
5. _ _ _ _ _ N makes the iNFiT!, MAX!> and MAXINE!.
6. Sony's DNE-1000 is a _ _ _ _ _ N _ _ _ editing system that can function as a stand-alone or networked workstation.
7. C _ _ _ _ _ is introducing the Optimum line of VHF transmitters.
8. Leitch will feature its X _ _ _ _ _ 12x1 serial digital switcher with analog audio.
9. Discreet Logic's _ _ _ _ _ R virtual set system.
10. Panasonic has added serial digital inputs to its H1906DP broadcast _ _ _ I _ _ _.
11. Harris Corporation is showing a solid-state DTV transmitter with silicon _ A _ _ _ _ _ RF devices.
12. Belden Wire & Cable is introducing the latest additions to the _ _ _ L _ _ _ _ _ line of broadcast cables.
13. Fast Electronic is featuring the _ _ _ _ _ S _ _ _ real-time DV editing solution.
14. The A15X8 EVM/ERD ENG zoom lens is from _ _ J _ _ _ _.
15. _ _ _ C _ is introducing Super Trunk cables.
16. Hewlett-Packard is featuring the _ _ _ I _ _ _ _ _ server/disk-recorder series.
17. _ _ _ _ _ I is showing the SK-3000 HDTV camera.
18. The K20.ND character generator is being introduced by _ _ _ X _ _ _ _ _.
19. L _ _ _ _ _ is introducing the 3611NR MPEG-2 compression system.
20. _ _ _ _ _ N _ _ is showing the ADP-101i, an ancillary data processor.
21. Quantel's _ _ _ P _ _ _ video server features news, post and transmission applications.
22. _ O _ _ _ _ _ facility management system is designed by Odetics Broadcast.
23. Orban is showcasing the _ _ _ _ _ M _ on-air delivery system.
24. _ _ _ _ _ S _ _ _ _ _ is showing the DVCPRO 200 series desktop VTR and 3-CCD camcorder.
25. Pinnacle is announcing a new control panel for _ _ L _ _ _ _.
26. _ A _ added Digital SuperPack microelectronic battery communication system to its product line.
27. Pluto Technologies is showing the _ _ _ C _ digital video recorder.
28. _ _ _ C _ _ _ makes the SV953 MPEG-2 Stream Station testing solution.
29. _ _ _ _ _ R _ Design Labs is presenting the NFSserver video server with ATM.
30. The DVS-7200 digital video switcher can be seen at the S _ _ _ booth, if there is room.
31. View the M-2100 Digital Master Control Solution at the _ _ _ _ _ R _ _ _ _ booth.
32. _ _ _ M _ _ _ Broadcast Systems is showing its new 1657D 12-bit digital cameras.
33. _ T _ _ Scientific has the new SC-3 routing control system.
34. _ _ D _ _ _ _ _ is announcing its new TVM-821D serial digital waveform monitor/vectorscope.
35. A new four-track MD 564 digital Portastudio is available from _ _ _ _ _ A _.
36. Tektronix is featuring the _ R _ _ _ _ _ Professional Disk Recorder.
37. The NV3064 AES3 audio routers can be found at the _ V _ _ _ _ _ booth.
38. Leitch is introducing the ADC P _ _ _ _ _ block audio connection interfaces.
39. Miller Fluid Heads is featuring a new _ _ R _ _ fluid head.
40. Pixel Instruments Corporation is showing the PC _ _ _ P _ _ _ _ _ still-store.
41. Sphere DveousFX is offered by _ _ _ _ _ X Digital Video.
42. Prime _ M _ _ _ is featuring the Time Machine digital video processor.
43. AVS is releasing the _ _ _ _ _ E Manuscript dual channel character generator.
44. W _ _ _ _ _ Technologies is releasing the BEL 1000 AES/EBU digital audio signal modifier.
45. _ _ _ _ _ H _ _ _ _ _ is launching the EM3031-U and the EM3032-U wireless microphone receivers.
46. Fast Forward Video's digital recorder series is called the _ _ _ G _.
47. _ _ _ Z _ _ _ is offering the M2100 charger/power supply.
48. Panasonic is introducing a new high-speed DVCPRO non-linear editing _ _ _ K _ _ _ _ _.
49. Artel's switching solution is called _ _ _ _ _ A _ _ _.





BE FASTtrack

BE FASTtrack is an exclusive *Broadcast Engineering* magazine feature designed to help make your time on the exhibition floor as efficient as possible. Companies are grouped first according to product categories, then by location.

The result is BE FASTtrack, which provides you with the shortest path between like products. Don't waste time wandering around looking for a booth. Let the BE FASTtrack help you find the companies that have what you need.



AUDIO ACCESSORIES	176
AUDIO MIXERS-PORTABLE, STUDIO	176
AUDIO PROCESSING, CONVERSION	176
AUDIO RECORDING, STORAGE & PLAYBACK	176
AUDIO ROUTING AND DISTRIBUTION	176
AUTOMATION SYSTEMS-TV	178
CABLE TV EQUIPMENT & SET-TOP TECHNOLOGY	178
CAMERA SUPPORT, ROBOTICS AND VIRTUAL SETS	180
CAMERAS, LENSES AND ACCESSORIES	180
CHARACTER GENERATORS, PROMPTERS AND TITLERS	182
COMPRESSION EQUIPMENT-AUDIO, VIDEO	182
COMPUTERS AND PERIPHERALS	184
DEALERS AND DISTRIBUTORS	184
DESKTOP VIDEO SYSTEMS	184
DIGITAL AUDIO WORKSTATIONS	186
DUPLICATION & DISTRIBUTION EQUIPMENT AND SERVICES	186
FILM EQUIPMENT AND SERVICES	186
GRAPHICS AND ANIMATION SYSTEMS	188
HDTV PRODUCTION EQUIPMENT	188
INTERCOM, IFB PRODUCTS, HEADSETS	188
LIGHTING EQUIPMENT AND ACCESSORIES	190
MICROPHONES AND ACCESSORIES	190
MICROWAVE, FIBER OPTIC AND TELCO EQUIPMENT	192
MULTIMEDIA CD-ROM AND INTERNET DEVELOPMENT	192
POWER AND POWER CONDITIONING PRODUCTS	192
PRODUCTION FACILITIES AND SERVICES	192
PRODUCTION SWITCHERS, DVEs, EFFECTS/COMPOSITING	192
RECORDING MEDIA AND ACCESSORIES	192
RF FEEDLINE, COMPONENTS, TOWERS AND SERVICES	193
SATELLITE EQUIPMENT & SERVICES	193
STUDIO & FACILITY SUPPORT PRODUCTS AND ACCESSORIES	194
SYSTEM INTEGRATORS, CONSULTANTS AND REPAIR SERVICES	194
TECS, FRAME SYNCs AND VIDEO CONVERSION EQUIPMENT	194
TEST & MEASUREMENT EQUIPMENT	194
TV & ATV TRANSMITTERS, TRANSLATORS AND ANTENNAS	196
VEHICLES AND REMOTE SUPPORT EQUIPMENT	196
VIDEO ACCESSORIES	196
VIDEO EDITING SYSTEMS	198
VIDEO RECORDING, STORAGE, PLAYBACK AND SERVER SYSTEMS	198
VIDEO ROUTING AND DISTRIBUTION	198
WIRE, CABLE & CONNECTORS	198

BE FASTtrack

AUDIO ACCESSORIES

Wheatstone Corporation	1212
Dan Dugan Sound Design	1404
Svetlana Electron Devices	1424
VideoQuip Research Ltd.	1502
Illbruck	1512
Professional Sound Corporation	1517
Penta Laboratories	1720
Symetrix	1817
Circuit Research Labs	2106
Logitek	2521
Continental Electronics	2606
Yamaha Corporation of America	3021
Penny & Giles	3424
Radio Design Labs - RDL	3724
Rycote Microphone Windshields	3726
Henry Engineering	4012
Eventide	4101
Horita	5155
Acoustic Systems	5255
ATI Audio Technologies	5527
Whirlwind	5747
Pixel Instruments	6060
Image Video	6557
R-Columbia Products	6745
Sennheiser Electric	6760
Sprocket Digital	6860
JBL Professional	6940
AKG Acoustics	6948
TASCAM	6952
Wireworks	7206
Dorrrough Electronics	7209
Acoustical Solutions	7218
Videotek	8534
TDC Tally Display Corporation	8679
Snell & Wilcox	9470
NVISION	9681
Ward-Beck Systems	11025
James Grunder/Hamlet	11051
Miranda Technologies	11425
Avitel Electronics	11570
ASACA ShibaSoku	11914
Wohler Technologies	LA 501, 9773
Mackie Designs	M 8038
Dolby Labs	S 206, 8940
JK Audio	S 1631
J L Fisher	S 2344
Telect	S 2356, M 7342
Milestek	S 3542
Korg USA Inc.	S 5763

AUDIO MIXERS-PORTABLE, STUDIO

Wheatstone Corporation	1212
Cooper Sound Systems	1404
Coffey Sound Service	1428
VideoQuip Research Ltd.	1502
Bradley Broadcast Sales	1506
Professional Sound Corporation	1517
Fidelipac	1902
Comrex	2121
Arrakis Systems	2406
AEQ	2412
Audio Developments	2424
Dongseo Electronics	2426
Continental Electronics	2606
Solid State Logic	2612
Location Sound	2627
Auditronics	3018
Yamaha Corporation of America	3021
Harrison by GLW Inc.	3315
Euphonix	3318
Radio Design Labs - RDL	3724
Autogram Corporation	3906

Henry Engineering	4012
Aphex Systems	4103
ATI Audio Technologies	5527
Shure Brothers	5613
Whirlwind	5747
Fostex	6357
J-Lab Company	6532
JBL Professional	6940
TASCAM	6952
AMEK Consoles	7343
FOR.A Corporation	8514
AMS Neve plc.	8810
Micron Audio Products	8876
Zaxcom	10270
Otari	10580
Graham-Patten Systems	10976
Ward-Beck Systems	11025
ProSource/Broadcast Marketing	11339
Mackie Designs	M 8038
B&H Photo	S 1508
JK Audio	S 1631
Calrec	S 3976
Korg USA Inc.	S 5763
Soundtracs USA	S 5763

AUDIO PROCESSING, CONVERSION

Dan Dugan Sound Design	1404
Bradley Broadcast Sales	1506
Focusrite Audio/Group One Ltd.	1514
Apogee Electronics	1718
Audio Processing Technology Ltd.	1727
Gorman-Redlich Mfg Company	1910
Superscope Technologies/Marantz	2102
Circuit Research Labs	2106
Gentner Communications Corporation	2117
Orban	2402
Continental Electronics	2606
Cutting Edge Technologies	3006
Penny & Giles	3424
Roland Corporation US	3612
Alesis	3618
Radio Design Labs - RDL	3724
Intraplex	3901
Harris Corp./Broadcast Division	5909, M 6628
Sony Broadcast Products	5929
Pixel Instruments	6060
Lighthouse Digital Systems Inc.	6532
Television Equipment Associates	7215
AMEK Consoles	7343
Kramer Electronics	7873
Nova Systems	8283
Leitch Inc.	8640
Benchmark Media Systems	8664
Snell & Wilcox	9470
NVISION	9681
Zaxcom	10270
Modulation Sciences	11253
Vistek Electronics	11640
AAVS/Sencore	11976
Wohler Technologies	LA 501, 9773
Dolby Labs	S 206, 8940
Axon Digital Design	S 1049
B&H Photo	S 1508
Audio Interviewal Design/Sanken	S 3638, 8777
Calrec	S 3976
Bi-Tronics	S 4973

AUDIO RECORDING, STORAGE & PLAYBACK

DENON	1021
ENCO Systems	1024
Coffey Sound Service	1428
Bradley Broadcast Sales	1506

HHB Communications Ltd.	1524
Doremi Labs	1619
360 Systems	1724
Sprague Magnetics	1822
Fidelipac	1902
Crouse-Kimzey Company	1907
Audi-Cord	2006
Broadcasters General Store	2019, 8865
TimeLine	2027
Superscope Technologies/Marantz	2102
AKAI Digital	2524
Continental Electronics	2606
Solid State Logic	2612
Yamaha Corporation of America	3021
Roland Corporation US	3612
Alesis	3618
Digigram	3912
Henry Engineering	4012
Harris Corp./Broadcast Division	5909, M 6628
Computer Expressions	6061
Rorke Data	6232
Fostex	6357
McCurdy Radio Industries	6917
Studer	6948
TASCAM	6952
Nagra Kudelski SA	7005
PEP	7200
FOR.A Corporation	8514
AMS Neve plc.	8810
Zaxcom	10270
Otari	10580
AAVS/Sencore	11976
Andataco	M 7330
Dolby Labs	S 206, 8940
Pristine Systems	S 1935
MMS Multi Media Systems	S 2550
Mega Drive Systems	S 4120

AUDIO ROUTING AND DISTRIBUTION

Wheatstone Corporation	1212
VideoQuip Research Ltd.	1502
Professional Sound Corporation	1517
360 Systems	1724
Studio Technologies	2104
Switchcraft	2924
Auditronics	3018
Burk Technology	3524
Radio Design Labs - RDL	3724
Autogram Corporation	3906
Henry Engineering	4012
Sierra Automated Systems	4027
ATI Audio Technologies	5527
Whirlwind	5747
Audio Accessories	5759
Lighthouse Digital Systems Inc.	6532
J-Lab Company	6532
Image Video	6557
Sprocket Digital	6860
Di-Tech Inc.	7341
Sierra Video Systems	7437
Kramer Electronics	7873
Nova Systems	8283
Ross Video	8354
Lectrosonics	8372
Videotek	8534
Leitch Inc.	8640
Datatek	8814
Tekniche Ltd.	8817
Knox Video Products	8867
OpAmp Labs	8884
Link Electronics	9081
Telecast Fiber Systems	9281
Digipath Video	9453

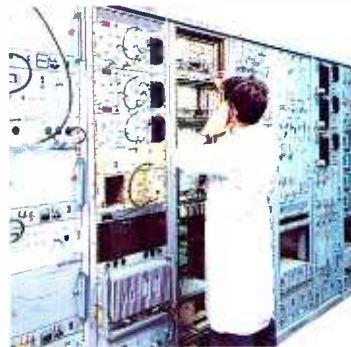
ELETTRONICA INDUSTRIALE

the operating branch of
MEDIASET GROUP

14 regional operating
centers ensuring a
nationwide coverage



Over 1.000 highly
specializing technicians
guaranteeing
maintenance, signal
quality control and
trouble-shooting 24 hours
a day



1.900 stations installed
in ten years.
7.000 transmitters and
transposers, 4.500 radio
links designed,
manufactured, engineered,
installed and managed
throughout Italy

Over 8.000 broadcast
hours produced by our
ENG/SNG crews using our
production and
post-production studios



ELETTRONICA INDUSTRIALE

UNI EN ISO 9001 CERTIFIED

The turnkey TV

20035 Lissone (MI) ITALY - Via F. Turati, 7 - Tel. +39.39.7398.1 - Fax +39.39.7398.440
Internet: <http://www.elind.it> - E-mail: info@elind.it

Circle (103) on Free Info Card



No Matter How You Play It, You'll Have a Winning Hand.



Play the LMA/duopoly card. Intraplex digital audio multiplexers let you deliver programming to multiple stations from a single consolidated studio.

Or play the STL card. Radio stations and radio networks are saving money while enjoying higher audio quality by using Intraplex equipment for STL, LMA or networking applications.

Many radio stations have already chosen Intraplex for the LMA, duopoly, or STL transmission solution. When you choose Intraplex, you'll get the benefits of dealing with the industry's digital transmission leader and the flexibility to handle all your communications needs.

Why gamble? Call for our free booklet on radio stations already using Intraplex. In it, radio professionals give their own reasons for choosing Intraplex for a quality transmission solution. **Intraplex, Inc.** (508) 692-9000. In Europe, +44 1442 87C103.



Intraplex

Intraplex, Incorporated
c/o Liberty Way
Westford, MA 01886-3636 U.S.A.
TEL: (508) 692-9000 FAX: 2200
England TEL: +44 1442 870103 FAX: 870148 Web Address: <http://www.intraplex.com>

Circle (104) on Free Info Card

BE FASTtrack

Snell & Wilcox	9470
NVISION	9681
Philips BTS	9901
Utah Scientific	9925
PESA Switching Systems	10958
Ward-Beck Systems	11025
Miranda Technologies	11425
Pro-Bel Ltd.	11501
Chyron	11501, S 3632
Avitel Electronics	11570
Vistek Electronics	11640
Sandar Electronics A/S	11864
ADC Telecommunications	11958
AAVS/Sencore	11976
Wohler Technologies	LA 501, 9773
Rean Products	S 1062
Telect	S 2356, M 7342
Interlace Engineering Corporation	S 2559
AVP Mfg. & Supply	S 3020
Milestek	S 3542
Bittree	S 3775
Bi-Tronics	S 4973

AUTOMATION SYSTEMS-TV

Dan Dugan Sound Design	1404
CBSI Custom Business Systems	3012
Tel-Test	5622
Sony Broadcast Products	5929
Alamar Electronics USA	6337
Lighthouse Digital Systems Inc.	6532
Image Video	6557
Drake Automation Ltd.	6917
McCurdy Radio Industries	6917
Odetics Broadcast	8522
Comprompter	8670
AVS Graphics	8822
ASC Audio Video Corporation	9258
Snell & Wilcox	9470
Media Computing	9561
CEA Digital Newsroom System	9661
Philips BTS	9901
Tektronix	9914
AVID Technology	9940
Columbine/JDS	10454
FloriCal Systems	10585
WSI	10980, M 6230
Matco	11340
Vinten Inc.	11414
Pro-Bel Ltd.	11501
Chyron	11501, S 3632
Leightronix	11561
Vistek Electronics	11640
AAVS/Sencore	11976
The Associated Press	S 205
Sundance Digital	S 1228
NewsMaker Systems	S 1625
DCM	S 2100
Pioneer New Media Technologies	S 2738
BDL-Autoscript	S 3032
Crystal Computer	S 3176
Adtec Productions	S 3235
Inscriber Character Generator	S 3338
Louth Automation	S 3619
SeaChange Technology	S 5463

CABLE TV EQUIPMENT & SET-TOP TECHNOLOGY

C-COR	4649
Hotronic	5500
McCurdy Radio Industries	6917
Nagra Kudelski SA	7005
Odetics Broadcast	8522
Videotek	8534
Microwave Filter	8771
IRT Electronics Pty Ltd.	8864
AVCOM of VA	8880

Proven Solid State UHF TV Transmitters, Your Bridge To The Digital Future.

1kW to 10kW Solid State UHF TV Transmitters, For Your Needs Today and Tomorrow.



For Superior Performance, Choose Acrodyne

Our unique modular exciter design allows you to choose a transmitter best suited for your application. Our TL Series LPTV transmitters perform superbly at very affordable prices. With our exclusive enhanced IM Cancellation we can achieve industry leading in-band IM performance. Our TR Series systems are equipped with additional video and IF processing to *meet the most demanding requirements- Full Service and LPTV.*

More Power To You!

Acrodyne's 650 Watt (10% aural) power amplifier modules are unequalled in power capacity and gain, providing an excellent balance of parallel design for redundancy – simplicity for affordability.

Customer Service and 24 Hour Technical Support

Get experienced support before and after the sale including 24 hour technical support. And with over 25 years in the business, count on us to be here when you need us.



Digital Ready

Choose Acrodyne with confidence. These transmitters can be readily converted for use with DTV or other digital input signals. Our years of experience building highly linear amplifiers and our more recent developments designing advanced correction circuits for our high power transmitters provide you the assurance that your future needs will be met.

Expandability...For Future Needs

Our power amplifier design is cost effective for any power output to 10kW! Systems built for expandability can be easily upgraded by simply adding the appropriate number of power amplifier modules.

Experience

Since 1989, hundreds of reliable, advanced Acrodyne solid state transmission systems have been delivered. For your Full Service or LPTV requirements, contact Acrodyne today and build your bridge to the future.

ACRODYNE

More Power For The 21st Century.

Acrodyne Industries, Inc. 516 Township Line Road, Blue Bell, Pennsylvania 19422 • Phone: 800-523-2596 / (215) 542-7000 • Fax: (215) 540-5837 • E-Mail: acrodyne@pond.com • www.acrodyne.com

© 1997 Acrodyne Industries, Inc. All rights reserved.

See us at NAB '97, booth #11925

Circle (90) on Free Info Card

www.americanradiohistory.com

BE FASTtrack

Scala Electronic 9053
 Channelmatic 9164
 Quantel 9931
 IPITEK Inc. 10182
 Enterprise Systems Group 10567
 AJ Technology 10964
 Wegener Communications 11940
 ITS Corporation 11949
 Sun Microsystems 15439
 Satellite Export & Engineering LA 103
 BARCO Industries M 7819, 11919
 Sundance Digital S 1228
 Artel Video Systems S 1560

General Instrument S 2206
 Divicom S 2225
 Dawn Satellite S 3071
 Intelvideo S 3122
 Inscrber Character Generator S 3338
 Intelsis Sistemas Inteligentes S 3766
 Norpak S 6026

CAMERA SUPPORT, ROBOTICS AND VIRTUAL SETS

Electrophysics Corporation 5526
 Chapman/Leonard Studio Equipment 5754

Quickset International 6932
 Cartoni USA 8279
 Cine 60 8858
 Sachtler Corporation of America 9231
 Radamec Broadcast Systems 9376
 Miller Fluid Heads (USA) 9376
 Band Pro Film/Video 10072
 Cinema Products 10837
 Aerial Films 10966
 Accom 10970
 O'Connor Engineering Labs 11044
 Stanton Video Services 11173
 Pro Cyc 11272
 Cinekinetic 11277
 Cammate 11285
 ProSource/Broadcast Marketing 11339
 Vinten Inc. 11414
 Innovision Optics 11482
 RT-SET 11501
 Chyron 11501, S 3632
 Bogen Photo 11558
 Telemetrics 11646
 Italiana Ponti Radio SRL 11973
 Egriment USA 11980
 Camrobotic Systems M 6470
 Orad Hi-Tec Systems M 8151
 P E Photron S 1334
 B&H Photo S 1508
 Shotmaker Dollies/Camera Platforms S 1770
 J L Fisher S 2344
 Discreet Logic S 2906
 Magic Teleprompting Inc. S 2936
 FLIR Systems Inc. S 4538
 Porta-Jib/Hollywood General Machine S 5271
 Digimedia S 5358
 ParkerVision S 5475



How to avoid the hidden costs behind every incandescent indicator.



We offer direct replacement LEDs for virtually every incandescent indicator lamp made.

Though inexpensive itself, an incandescent bulb brings with it some very costly baggage.

High maintenance and down-time costs.

Incandescents have a short operating life because of the intense heat they generate, the destructive on-off cycling they see and their vulnerability to even minor vibrations.

Poor energy efficiency. Over 90% of the power they consume is actually wasted, producing unwanted heat.

The premature failure of nearby components. Incandescents generate high tem-

peratures which simply fry other components.

Now for the solution—our long-lasting replacement LEDs. They have no filaments, are unaffected by on-off cycling, and tolerate considerable vibration. They also draw 90% less energy and generate almost no heat.

For more information, call (310) 534-1505 or FAX us at (310) 534-1424.

LEDTRONICS
More Choices, More Light.

CAMERAS, LENSES AND ACCESSORIES

NTV Int'l Corporation 34, 8366
 Multimedia Accessories 4843
 Electrophysics Corporation 5526
 Sony Broadcast Products 5929
 Toshiba Corporation 6043
 Arriflex Corporation 6547
 Hitachi Denshi America Ltd. 6705
 BURLE INDUSTRIES 7007
 Angenieux SA 7013
 Thomson Broadcast 7414
 Century Precision Optics 8230
 FOR.A Corporation 8514
 JVC Professional Products Company 8801
 EEV 9558
 Utah Scientific 9925
 Band Pro Film/Video 10072
 Ikegami Electronics 10431
 Canon USA/Broadcast Optics 10548
 Concept W Systems 10984
 Fujinon 11031
 Schneider Corporation 11177



Circle (91) on Free Info Card

CONNECT WITH THE BEST



RFS Cablewave

MDS/MMDS/ITFS

Transmitting Antenna

2.0 to 2.7 GHz

Horizontal or Vertical Polarization

Wide Selection of Azimuth and Elevation Patterns

Low VSWR

Beamtilt and Null Fill Available

Power Handling Up To 1,400 Watts

Fiberglass Radome

Pressurized Or Non-Pressurized Versions

Visit us at NAB Booth 11954

Cablewave Systems — Your quality choice for reliable antenna systems.



Flexwell® Elliptical Waveguide (WE30)

Flexwell® Coaxial Cables

High-Performance Connectors

Installation Accessories

Premium Jumpers

Pressurization Systems



RFS Cablewave Systems

Radio Frequency Systems, Inc.
60 Dodge Avenue
North Haven, CT 06473
(203) 239-3311 FAX (203) 234-7718

Circle (92) on Free Info Card

BE FASTtrack

Mohawk/CDT Broadcast Cables
ProSource/Broadcast Marketing
Innovation Optics
Telemetrics
United States Broadcast
Television Engineering
Elmo Mfg
WolfVision
Broadcast Exchange
B&H Photo
IRTE SpA
FLIR Systems Inc.
ParkerVision

11283
11339
11482
11646
11907
LA 301, 5628
M 6766
M 7270
M 7942
S 1508
S 2850
S 4538
S 5475

CHARACTER GENERATORS, PROMPTERS AND TITLERS

Caption Colorado
Horita
Image Logic Corporation
Mirror Image Teleprompting
Image Video
Sprocket Digital
Video Data Systems
Evertz Microsystems
Pixel Power Ltd.
Nova Systems
Videonics

4856
5155
5259
5857
6557
6860
6928
7160
7983
8283
8283

Listec Video Corporation
Comprompter
Burst Electronics
Broadcast Video Systems/BVS
AVS Graphics
QSI Systems
Knox Video Products
Telescript
Digital Graphix
CEA Digital Newsroom System
Philips BTS
Scitex Digital Video
Niche
Q-TV/O'Connor
EEG Enterprises
Tekskil Industries
Computer Prompting & Captioning Co.
Miranda Technologies
Chyron
Cheetah Systems
Wohler Technologies
McRoberts Software
Compix Media
B&H Photo
Interlace Engineering Corporation
Play Incorporated
BDL-Autoscript
Evolving Video Technology
Adtec Productions
Inscriber Character Generator
D-Vision Systems
Soft-Touch

8652
8670
8765
8766
8822
8854
8867
8944
9325
9661
9901
10714
10964
11044
11158
11164
11255
11425
11501, S 3632
I 4045
LA 501, 9773
M 7746
M 8333
S 1508
S 2559
S 2819, 8676
S 3032
S 3160
S 3235
S 3338
S 3625
S 4072



Digital Traffic Jam?

Miranda Will Get You Moving

Avoid "traffic jams" on the road to the Digital Frontier with Miranda's comprehensive line of integrated product solutions... like the *imaging* family — modular, high-quality Audio and 4:2:2 Video converters, encoders and decoders with optional remote control software — all designed for seamlessness and a peak performance to keep you in the fast lane!

At an intersection between the video and workstation worlds? Consider Miranda's family of cross-platform Digital Video Gateways supporting the entire range of digital imaging formats.

Whatever business you're driving, count on Miranda to get the wheels in motion.

Some of our digital solutions include:

- 4:2:2/NTSC/PAL Composite Encoders/Decoders
- Serializers/Deserializers
- FrameSyncs, Ancillary Data Processors
- Line Quadruplers
- 4:2:2/CAV D/As and A/Ds
- 4:2:2/4fsc Converters
- Digital Disk Recorders
- Computer Gateways

Miranda Technologies Inc.
2323 Halpern
St-Laurent, Quebec
Canada H4S 1S3
Phone: 514.333.1772
Fax: 514.333.9828

Call us for more
information or
See us at NAB '97
LVC Booth # 11425

MIRANDA

Solutions For The Digital Frontier And Beyond

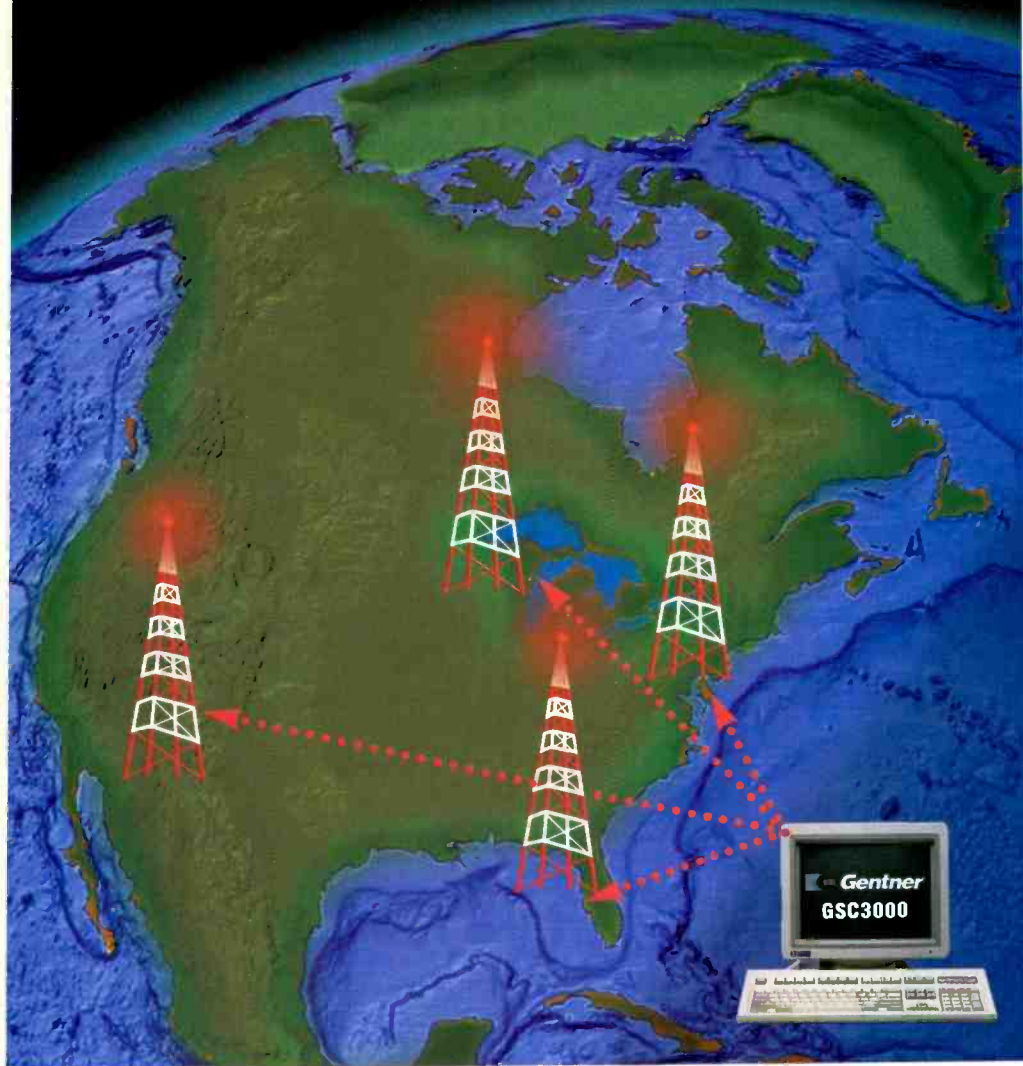
COMPRESSION EQUIPMENT- AUDIO, VIDEO

Wheatstone Corporation
Comrex
Continental Electronics
Radio Design Labs - RDL
Intraplex
Digigram
Hotronic
Nagra Kudelski SA
Thomson Broadcast
Leitch Inc.
Videomedia
ASC Audio Video Corporation
Snell & Wilcox
AJ Technology
Feral Industries
James Grunder & Associates
Vistek Electronics
RF Technology
ASACA ShibaSoku
Wegener Communications
Sencore/AAVS
Nuko Information Systems
Xing Technology
VDONet Corporation
Telos Systems
Sun Microsystems
Minerva Systems
Tiernan Communications
HEURIS/Pulitzer
Dolby Labs
IBM Telecommunications
Divicom
MMS Multi Media Systems
Digital Vision
Deutsche Telekom
Harmonic Lightwaves
FutureTel Inc.
Intelsis Sistemas Inteligentes

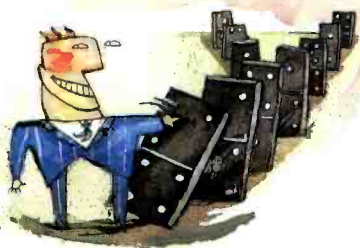
1212
2121
2606
3724
3901
3912
5500
7005
7414
8640
8947
9258
9470
10964
11051
11051
11640
11910
11914
11940
11976
I 4541
I 4853
I 4855
I 5250, 3006
I 5439
I 5545
LA 303, S 1670
M 6476
S 206, 8940
S 2219
S 2225
S 2550
S 2726
S 2863
S 2876
S 3758
S 3766

Circle (93) on Free Info Card

YOU HAVE A WHOLE NEW
WORLD OF TRANSMITTER SITES.
WE HAVE AN
INTELLIGENT SOLUTION.



You have three transmitters in New York, four in Chicago, two in Orlando and one in Albuquerque. With GSC3000 site controllers from Gentner, you can keep tabs on all of them from a single screen on your Windows® PC. You can execute commands or just let the GSC3000 at each transmitter site handle the decisions and report back at your convenience. The GSC3000 has enough on board intelligence to function without a connection to a PC. Download a free copy of GSC3000 software at <http://www.gentner.com>.



COMPLEX AUTOMATION THROUGH MACROS
The GSC3000 lets you create macros allowing the system to do complex control tasks, like automatically switching from the main to the standby transmitter. Virtually any event can trigger a macro allowing automation of your system.

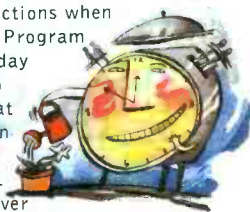


THE BUILDING BLOCK APPROACH TO SITE CONTROL
The GSC3000 is flexible enough to meet your needs whether you are a single station site or a multi-station network. You get from 8 to 256 channels of metering, status, and command per site at as many as 256 sites.



WINDOWS® BASED APPLICATION SOFTWARE
Operating in Windows® 95, Windows® NT or Windows® 3.1 the GSC3000 software provides point-and-click convenience while you monitor, program, and operate your site or sites. Plus, you can access the system anywhere you have a PC.

MANUAL, AUTOMATIC OR TIME-OF-DAY FUNCTIONS
Program the GSC3000 to make automatic corrections when problems arise. Program it with time-of-day commands to do specific things at specific times on specific days. Then walk away. Of course, wherever you might find yourself, you can access the system via PC or laptop.



FREE SITE CONTROLLER GUIDE
Featuring the GSC3000, VRC2000,

and all the accessories, this guide will walk you through the decision-making information you need to design or upgrade your site control system. Just call and ask for Gentner's free Site Control Guide.

1.800.967.9836

Gentner

<http://www.gentner.com> · FAX-on-demand 800.695.8110
1.801.975.7200

Windows is a registered trademark of Microsoft Corporation

Circle (105) on Free Info Card

www.americanradiohistory.com

BE FASTtrack

RE America
Zapex Technology
Vela Research
C-Cube Microsystems

S 4068
S 4938
S 5426
S 5838

Quantum Corporation
Digital Equipment Corp. M 7425, 9770, S 3308
RGB Spectrum M 7438
Communications Specialties Inc. M 7455
JMR Electronics M 7938
Miro Computer Products M 8222
MicroNet Technology M 8225
ATTO Technology M 8347
Storage Concepts S 1225
Pristine Systems S 1935
IBM Telecommunications S 2219
Adirondack Software S 2927
Dubner International S 2934

Viewgraphics S 3042
Inscriber Character Generator S 3338
Autologic Information Int'l All S 4076
ATLIGHTSPEED S 4373
TiltRac Corporation S 4574
British Information Services S 4858
Intergraph Computer Systems S 5432
Pulizzi Engineering S 6129

COMPUTERS AND PERIPHERALS

EDX Engineering 1624
Rorke Data 6232
QuVis Inc. 9564
CEA Digital Newsroom System 9661
Quantel 9931
Nuko Information Systems I 4541

DEALERS AND DISTRIBUTORS

Audiomation Systems/Sellmark 1301
Coffey Sound Service 1428
Bradley Broadcast Sales 1506
Professional Sound Corporation 1517
HHB Communications Ltd. 1524
Crouse-Kimzey Company 1907
Broadcasters General Store 2019, 8865
Continental Electronics 2606
Location Sound 2627
Multimedia Accessories 4843
TECNEC/Technical Necessities 5158
TBC Consoles 5441
Videomagnetics 5518
Union Connector 5756
Harris Corp./Broadcast Division 5909, M 6628
Hi-Tech Enterprises Inc. 5932
Media Concepts 6360
Lighthouse Digital Systems Inc. 6532
Broadcast Store 8666
Pro Battery 8759
Jensen Tools Inc. 8860
IRT Electronics Pty Ltd. 8864
Band Pro Film/Video 10072
Antenna Technology Corp./ATCi 10358, S3063
Advanced Designs Corporation 10376
H L Dalis 11180
ProSource/Broadcast Marketing 11339
Nalpak Video Sales 11644
Comprehensive Video Group 11650
United States Broadcast 11907
RF Technology 11910
GEPCO International Inc. 11984
Satellite Export & Engineering LA 103
Television Engineering LA 301, 5628
Zack Electronics M 7269
Broadcast Exchange M 7942
Balboa Capital S 1035
Axon Digital Design S 1049
Ste-Man S 1220, 8279
B&H Photo S 1508
Dawn Satellite S 3071
Herman Electronics S 3121
TAI Audio S 6033

DESKTOP VIDEO SYSTEMS

Image Logic Corporation 5259
DPS 5453
Toshiba Corporation 6043
Pixel Instruments 6060
Rorke Data 6232
Hewlett-Packard 8071, S 2200
Nova Systems 8283
FOR.A Corporation 8514
Pinnacle Systems 8658
Burst Electronics 8765
Videomedia 8947
Philips BTS 9901
Quantel 9931
Band Pro Film/Video 10072
Panasonic Broadcast and TV Systems 10701
United Media 11027
Comprehensive Video Group 11650

For over **25** years,
we've given you
the **power**
to **succeed.**

Now, the accumulated **experience** and resources of Square D UPS, Merlin Gerin UPS, EPE and Topaz are united as one entity - MGE UPS Systems, Inc. As the world's **leading** manufacturer of uninterruptible power supplies, we **protect** computer-based data as well as all electrical equipment. We keep computer networks up during **power** disruptions so everything from your personal e-mail to your family's airline reservations to your company's account records are not lost.

Now **all** the power you need is safeguarded under **one** single name.

MGE UPS SYSTEMS. Nothing will stop you now. ▶

epe
EPE TECHNOLOGIES INC.

MERLIN GERIN

TOPAZ

SQUARE D

(It all adds up to
the power of MGE)

MGE
UPS SYSTEMS

Nothing will stop you now™

1-800-523-0142
www.mgeups.com

©MGE UPS SYSTEMS Inc. 1997

Circle (106) on Free Info Card

See us at NAB Booth #S3770



The Industry Standard.



The New Industry Standard.

Introducing the RTS™ 803 TW Master Station Intercom from Telex®.

At Telex®, we continually strive to keep the lines of communication open. First we brought you the RTS™ 802, the 15-year industry standard for two-wire communications. Now, we've responded to your changing needs with the RTS™ 803 TW intercom master station.

The RTS™ 803 includes many new standard features, is easier to operate, and features front panel level controls

and simplified keypad programming. And, to top it off, we've even reduced the price.

The 803 Master Station is plug compatible with the 802, as well as the entire RTS™ TW line of user stations, beltpacks, headsets and accessories. With upgraded features at a lower cost, plus the Telex reputation for reliability and performance, it's no wonder the RTS™ 803 is recognized as the new industry standard.

Telex®

9600 Aldrich Avenue South • Minneapolis, Minnesota 55420
612-884-4051 • Fax 612-884-0043
www.telex.com • E-mail: pro.sound@telex.com

BE FASTtrack

Sun Microsystems
HEURIS/Pulitzer
Creative Equipment Int'l
Adobe Systems
Specular
Data Translation
DMI/Techexport
Macromedia
Videofax/Chyron Corporation
McRoberts Software
Miro Computer Products
MicroNet Technology
NewTek
B&H Photo
MMS Multi Media Systems

I 5439
M 6476
M 6558
M 6623
M 6844
M 7154
M 7274
M 7333
M 7373
M 7746
M 8222
M 8225
S 1053, M 6618
S 1508
S 2550

Matrox Electronic Systems
Dubner International
Inscriber Character Generator
D-Vision Systems
Avitech Int'l
ATLIGHTSPEED
Silicon Graphics
Intergraph Computer Systems

S 2732
S 2934
S 3338
S 3625
S 4272
S 4373
S 4826
S 5432

360 Systems 1724
Crouse-Kimzey Company 1907
Broadcasters General Store 2019, 8865
Studio Technologies 2104
Orban 2402
Arrakis Systems 2406
AKAI Digital 2524
Continental Electronics 2606
Penny & Giles 3424
Roland Corporation US 3612
Digigram 3912
TBC Consoles 5441
Harris Corp./Broadcast Division 5909, M 6628
Nagra Kudelski SA 7005
Fairlight ESP Pty Ltd. 8276
AVID Technology 9940
Otari 10580
Merging Technologies M 6673
Innovative Quality Software M 6860
Soundscape Digital Technology M 7666
Mackie Designs M 8038
Pristine Systems S 1935
Play Incorporated S 2819, 8676
Sonic Solutions S 4132
Korg USA Inc. S 5763

DIGITAL AUDIO WORKSTATIONS

SADiE 1001
ENCO Systems 1024
VideoQuip Research Ltd. 1502
Doremi Labs 1619

BROADCAST and PROFESSIONAL VIDEO



A 12-BIT DIGITAL TRANSPORT SYSTEM

The 1250SB fiber optic transmission system exceeds your RS250C short-haul performance expectations. Digital Processing: 12-bit video and 20-bit audio insures transparent transmission of composite video and up to eight channels of audio. Designed for use within broadcast facilities and remote field production.

12-Bit Video: RS250 Short Haul.

20-Bit, 48 kHz Sampling; THD - 110 db.

Up to 8 Channels of Audio.

Audio SNR 91 dB; Video SNR 70 dB.

Differential Gain 0.2% and Phase 0.2°.

For more information on the 1250SB series and other Broadcast and Professional Video products contact...

 **Fiber Options** ... light years ahead™

80 Orville Drive • Bohemia, New York 11716-2533
(516) 567-8320 • 1-800-342-3748 • fax: (516) 567-8322
E-mail us at: info@fiberoptions.com or
visit our Web site at http://www.fiberoptions.com

Circle (108) on Free Info Card

See us at NAB Booth #S3538

DUPLICATION & DISTRIBUTION EQUIPMENT AND SERVICES

Continental Electronics 2606
TECNEC/Technical Necessities 5158
Dwight Cavendish 6058
ESE 7227
Garner Industries 7230
Videotek 8534
Burst Electronics 8765
Datatek 8814
Channelmatic 9164
Prime Image 9285
NVISION 9681
Enterprise Systems Group 10567
Panasonic Broadcast and TV Systems 10701
Matco 11340
Avitel Electronics 11570
AAVS/Sencore 11976
WavePhore I 4453
Disc Manufacturing/DMI M 7442
Telect S 2356, M 7342
TW Graphics S 3675
Keith Austin Enterprises S 4960

FILM EQUIPMENT AND SERVICES

Professional Sound Corporation 1517
TimeLine 2027
Options International 4653
Coherent Communications 5142
Steenbeck 5525
Chapman/Leonard Studio Equipment 5754
Union Connector 5756
Rank Cintel 6543
Arriflex Corporation 6547
Sprocket Digital 6860
Angenieux SA 7013
Management Graphics 7061
Evertz Microsystems 7160
The Great American Market 7221
Sachtler Corporation of America 9231
O'Connor Engineering Labs 11044
Innovision Optics 11482
Egripment USA 11980
Dubner International S 2934
Image Design Film Tech Inc. S 6140



**A scene from the
new training video:
"Removing Upper
Thoracic Tumors"**

But is that a liver?

Or a lung?

Or an intestine?

*When you MPEG encode,
you're never just encoding visual
data. You're compressing some-
thing important. Information.
Details. Content. Faces. Color.
Logos. Products.*

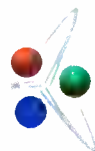
*So if you're even thinking
about the move to MPEG-2 for its
promise of increased image qual-
ity, be sure you're looking at the
right company, the right solution
and the right booth at NAB.*

*That would be our booth.
(M-6476).*

*Where you'll find the new
MPEG Power Box™ from NTT
Electronics and HEURIS/Pulitzer.
A high-quality MPEG-2 solution
backed by the incredible
engineering smarts of NTT
Electronics, a subsidiary of
Japan's largest telecommunica-
tions firm, NTT. And the user-
sensitive, powerful MPEG exper-
tise of HEURIS/Pulitzer.*

*So, when it comes to MPEG-2,
be sure you know who you're
dealing with.*

*Or there's no telling what will
get removed by mistake.*



HEURIS/PULITZER

800.923.9232

<http://www.heuris.com>

NEL



NTT Electronics Technology Corporation

See us at NAB booth M-6476

Circle (119) on Free Info Card

BE FASTtrack

GRAPHICS AND ANIMATION SYSTEMS

TBC Consoles	5441
Sony Broadcast Products	5929
Toshiba Corporation	6043
Microsoft/Softimage	6054
Alden Electronics	8370
FOR.A Corporation	8514
Pinnacle Systems	8658
Digital Graphix	9325
Snell & Wilcox	9470
Kavouras Inc.	9676
Quantel	9931
AVID Technology	9940
Advanced Designs Corporation	10376
AccuWeather	10564
EarthWatch Communications	10576
WSI	10980, M 6230
Ultimate Corporation	11040
Benchner	11176
Chyron	11501, S 3632
Comprehensive Video Group	11650
ASACA ShibaSoku	11914
5D	13945
Sun Microsystems	I 5439
Magellan Geographix	I 5453
Wohler Technologies	LA 501, 9773
Diaquest	M 6341
Digimation	M 6538
Specular	M 6844
QUARK	M 7138
DMI/Techexport	M 7274

Linker Systems Inc.	M 7633
McRoberts Software	M 7746
Boeckeler Instruments	M 7946
auto.des.sys	M 7963
MetaTools	M 8055
Orad Hi-Tec Systems	M 8151
The Associated Press	S 205
NewTek	S 1053, M 6618
P E Photon	S 1334
B&H Photo	S 1508
Getris Images	S 1838
Raytheon Electronics/Semiconductors	S 2353
DVS Digital Video Systems	S 2550
Interlace Engineering Corporation	S 2559
Matrox Electronic Systems	S 2732
Play Incorporated	S 2819, 8676
Lucent Technologies	S 2856
Discreet Logic	S 2906
Evolving Video Technology	S 3160
Inscriber Character Generator	S 3338
D-Vision Systems	S 3625
Baron Services	S 3629
TW Graphics	S 3675
ATLIGHTSPEED	S 4373
Alias/Wavefront Technologies	S 4820
Silicon Graphics	S 4826
Digimedia	S 5358
Electric Image	S 5416
Intergraph Computer Systems	S 5432
Interactive Effects	S 5660
Weathernews	S 5674
Oxberry	S 6038

HDTV PRODUCTION EQUIPMENT

NTV Int'l Corporation	34, 8366
Coffey Sound Service	1428
Toshiba Corporation	6043
Omicron Video	6746
Angenieux SA	7013
Videomedia	8947
Snell & Wilcox	9470
Ikegami Electronics	10431
Eastman Kodak Company	10640
Panasonic Broadcast and TV Systems	10701
Avitel Electronics	11570
RF Technology	11910
ASACA ShibaSoku	11914
MountainGate	11914
Extron Electronics	M 6633
DVS Digital Video Systems	S 2550
MMS Multi Media Systems	S 2550
Viewgraphics	S 3042
Yamashita Engineering Mfg/YEM	S 3635

INTERCOM, IFB PRODUCTS, HEADSETS

Coffey Sound Service	1428
Professional Sound Corporation	1517
Studio Technologies	2104
Comrex	2121
Sierra Automated Systems	4027
R-Columbia Products	6745
Television Equipment Associates	7215
Telex Communications	8510
Telecast Fiber Systems	9281



“Where’s that spec sheet?”

Find it fast with
VidCAD SPECS

VidCAD SPECS is your complete audio, video and multimedia catalog on CD ROM:

- Remove stacks of specification books and sheets from your desk
- Cut your time and energy spent searching for “the right model”
- Find product descriptions, options, hi-res color photos and CAD drawings

“I spend an awful lot of time searching through data trying to find the right manual, the right equipment, the I/O information. Then I have to copy it and get the material back into place. VidCAD Specs is a big time saver”

Tom Allen, Project Engineer, Univision Video Systems



Introductory Price \$295

30-day money back guarantee

Call (800) 949 - SPECS

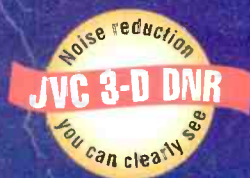
Another VidCAD Documentation Program (505) 524-8959 • Fax: (505) 524-9669 • Email: specs@vidcad.com

NAB booth #9664

Circle (120) on Free Info Card

From the dominating force in low-light cameras comes a **digital duo** that rules.

JVC's new KY-D29 digital camera and Digital-S BR-D40 dockable recorder.



The raw power of JVC's ground-breaking video technology has been harnessed once again. The KY-D29 digital camera with three, all-new 2/3" CCDs and superior 3-D DNR is one of the most sensitive cameras ever developed. ● It delivers the highest possible production quality, achieving a

phenomenal F11 at 2,000 lux, a signal-to-noise ratio of 65 dB, 350 lines of horizontal resolution, negligible vertical smear, and offers the industry's best 760,000 pixel CCDs. ● By mixing multiple frames to

cancel noise, then using motion detection to eliminate any lag, JVC's 3-D DNR produces dramatic results. Just compare it against any other camera with DNR and you'll find JVC's KY-D29 provides noise reduction you can clearly see.

● By utilizing JVC's next generation Super LoLux technology, the KY-D29 can shoot at 0.35 lux with minimal noise. This is the lowest level ever achieved by a camera — a level of darkness where the KY-D29 can see far better than the naked eye. ● And for optimum flexibility, JVC offers a complete line of studio accessories, including Trax.



You can now acquire the highest quality raw footage, and do so affordably, by mating the KY-D29 with JVC's Digital-S BR-D40 dockable recorder. ● Incomparable acquisition quality is made possible by the key features of Digital-S: 4:2:2 8-bit component processing and an extremely mild 3.3:1 compression ratio, yielding a data rate of 50 Mbps. ● And, when you begin editing with the absolute best raw footage you're ensured of outstanding picture quality right down to your final edit.

So, whether you're in the field or the studio, broadcast, cable, corporate, education or event videography, only the digital duo of the KY-D29 and the BR-D40 can provide this striking level of performance and affordability.

● For more information, visit our web site at www.jvcpro.com or call 1-800-JVC-5325 and mention **Product Code 1910**.



JVC
PROFESSIONAL

See us at NAB Booth #E801

Circle (121) on Free Info Card

"It's all here, totally run by computer. The video and audio are on computer disks. No tape maintenance. No master control operator. Our system for NewsChannel 5+ worked out of the box."

Roger Dowdy, Chief Engineer
NewsChannel 5
Nashville, Tennessee



A "TV station in a rack" makes dollars and sense.

FloriCal's "station in a rack" is a money-maker, whether you operate a single cable feed or run a multiple-channel operation with 5000+ spots per day. FloriCal can help you plan for future operations with our "start small, grow later" systems. We cover the range from LPTV to network origination – all with multiple-channel digital video systems management.

Call us today, and find out for yourself why our advanced technology has resulted in FloriCal being named one of Florida's fastest growing technology companies.

See the most complete line of TV automation equipment, from downlink to presentation

NAB97

Booth No. 10585
LVCC Main Hall



FLORICAL
SYSTEMS

Tel 352.372.8326 Fax 352.375.0859
Gainesville, Florida

BE FASTtrack

Ward-Beck Systems	11025
Anchor Communications	11170
Systems Wireless	11259
ComTek	11266
Pro-Bel Ltd.	11501
Chyron	11501, S 3632
Clear-Com InterCom Systems	11565
Television Engineering	LA 301, 5628
JK Audio	S 1631
Soft-Touch	S 4072

LIGHTING EQUIPMENT AND ACCESSORIES

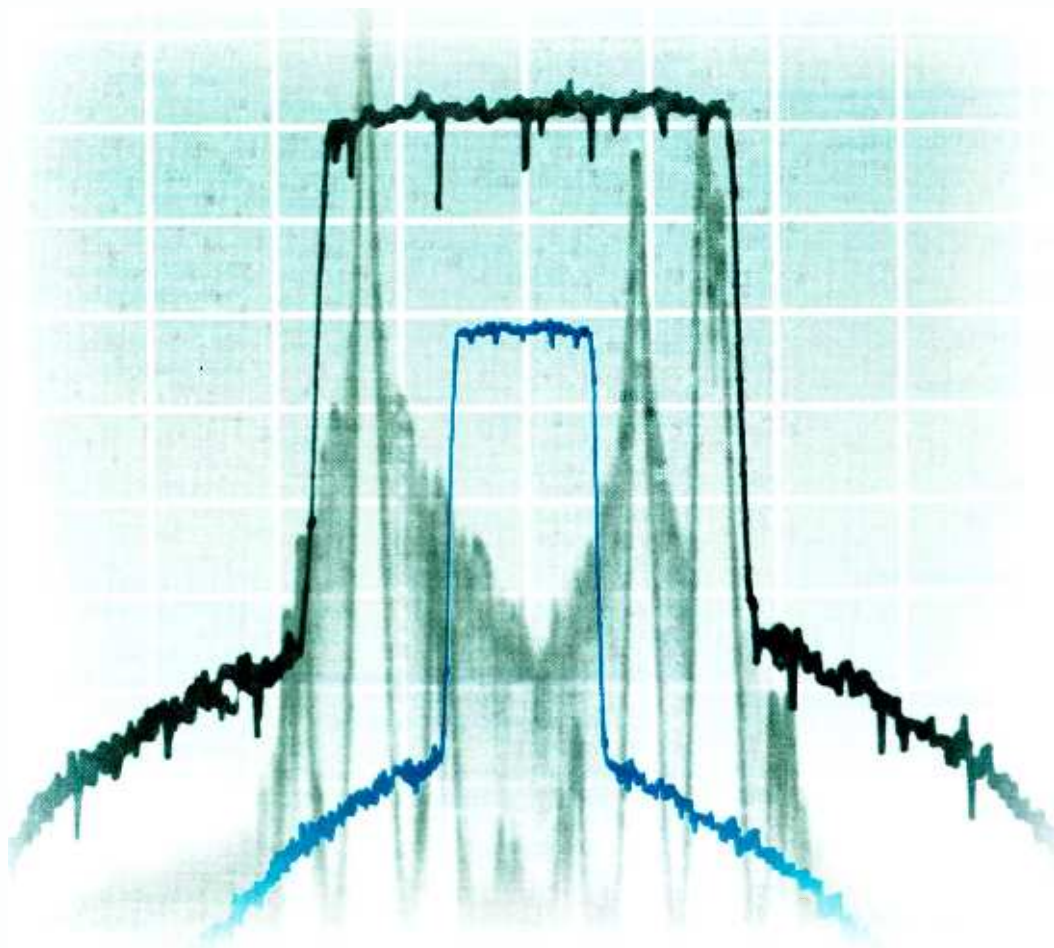
F J Westcott Company	4857
Chimera	5461
Frezzi Energy Systems	5513
Electrophysics Corporation	5526
Matthews Studio Equipment Group	5632
Rosco Labs/Entertainment Technology	5745
Union Connector	5756
Walter Brewer Corporation	5856
Strand Lighting	6147
Cinemills	6335
Arriflex Corporation	6547
Theatre Service & Supply	6747
LTM Corporation of America	6858
Lowe-Light Manufacturing Inc.	6925
Mole-Richardson	7143
American Studio Equipment	7158
The Great American Market	7221
Colortran	7873
Cine 60	8858
Dedotec USA	8876
Balcar	9167
Sachtler Corporation of America	9231
DeSisti Lighting/DESMAR	9876
Band Pro Film/Video	10072
ETC-Electronic Theatre Controls	10185
Anton/Bauer	10728
Tiffen Manufacturing	11048
L E Nelson Sales	11241
ProSource/Broadcast Marketing	11339
Bogen Photo	11558
VIDESSENCE	11961
K5600	S 1256
B&H Photo	S 1508
Kino Flo	S 2460
Lighttech Group	S 4567
Cool-Lux	S 4674

MICROPHONES AND ACCESSORIES

Coffey Sound Service	1428
Professional Sound Corporation	1517
Crown International	2418
Continental Electronics	2606
Location Sound	2627
Alesis	3618
Rycote Microphone Windshields	3726
Audio Ltd.	3727
Schoeps/Posthorn Recordings	4842
Multimedia Accessories	4843
beyerdynamic	5505
Shure Brothers	5613
Audio-Technica US	6311
Connectronics	6512
R-Columbia Products	6745
Sennheiser Electric	6760
Nady Systems	6808
AKG Acoustics	6948
AMEK Consoles	7343
Lectrosonics	8372
Telex Communications	8510
Countryman Associates	8751
Micron Audio Products	8876
Band Pro Film/Video	10072
Systems Wireless	11259

Circle (122) on Free Info Card

ATV, DVB, DAB... Ready



Itelco's equipment fulfills all safety requirements as specified by the relevant international organizations. ILC. CC

1997 Itelco Corporate Identity Office • Concept: Stefano Moretti, Copy: Raffi Unger



3 - 60 kW Solid State Liquid Cooled TV Transmitting Systems

Ready for the Future

Itelco solid state UHF and VHF TV transmitters are designed keeping the future in mind. The new age of digital audio and video broadcasting has already begun. Itelco commitment to digital broadcasting and its expertise and know-how in implementing new technologies guarantee state-of-the-art equipment. To upgrade the new line of transmitters to digital video broadcasting (DVT, DVB) you just have to swap with the new digital exciter. The new VHF (Band III) transmitter is already available as a digital audio broadcasting (DAB) transmitter by replacing the exciter with our field proven digital (DAB) exciter.

Probably the Best Technology Available Today

Headquarters • **Itelco S.p.A.** via dei merciai, s.n.c. P. O. Box 16, Serracavallo, Orvieto (TR) Italy
phone +39 763 316231 PABX • fax +39 763 316236 • telex 661013 ITELCO I.
North America and Canada • **Itelco USA Inc.**, Westminster CO, phone +1 303 431 1699 • fax +1 303 431 2868
Central and South America • **Itelco USA Inc.**, Miami FL, phone +1 305 715 9410 • fax +1 305 715 9414
Turkey • **Itelco Branch Office**, Istanbul, phone +90 212 2732365 • fax +90 212 2732368
China • **Itelco Beijing Office**, Chaoyang District Beijing CHINA, phone +86 10 4948151 • fax +86 10 6494823
Web site: <http://www.itelco-usa.com> • E-mail: itelco@krenet.it



Circle (123) on Free Info Card

www.americanradiohistory.com

BE FASTtrack

ComTek 11266
ProSource/Broadcast Marketing 11339
Azden Corporation S 1260
B&H Photo S 1508
J L Fisher S 2344
Audio Intervisual Design/Sanken S 3638, 8777
Premier Wireless S 4358

MICROWAVE, FIBER OPTIC AND TELCO EQUIPMENT

DB Elettronica 1027
Comrex 2121
Utility Tower 2204
Moseley Associates 2602
TFT Inc. 3003
CTE International 3824
Intraplex 3901
TWR Telecom/Lighting 3904
ABE Elettronica SPA 4940
Coherent Communications 5142
Ortel Corporation 5143
CPI Eimac Division 5604
ITELCO SpA 5742
Toshiba Corporation 6043
Conifer Corporation 6212
BURLE INDUSTRIES 7007
Broadcast Microwave Services 7202
Television Equipment Associates 7215
Microwave Radio 7421
N Systems/NSI 7641
Leitch Inc. 8640
NuComm 8654
COMWAVE/Communications Microwave 8683
Microwave Filter 8771
Multidyne Electronics 8783
IRT Electronics Pty Ltd. 8864
AVCOM of VA 8880
Telecast Fiber Systems 9281
IPI TEK Inc. 10182
Canon USA/Broadcast Optics 10548
Andrew 11054
RF Technology 11910
ITS Corporation 11949
ADC Telecommunications 11958
Italiana Ponti Radio SRL 11973
GEPCO International Inc. 11984
Linear Equipamentos Electronic I 4845
Telos Systems I 5250, 3006
SierraCom LA 204
Frontline Communications LB 204, 11970
Transoft Technology M 6851
SSE Telecom M 7747
Force Inc. S 1022
Axon Digital Design S 1049
Geneva Aviation S 1506
Artel Video Systems S 1560
TRON-Tek S 2558
IRTE SpA S 2850
Harmonic Lightwaves S 2876
ETM Electromatic S 3476
Fiber Options S 3538
Milestek S 3542
Intelsis Sistemas Inteligentes S 3766
Delco Wire & Cable S 3972
RE America S 4068
VYVX Inc. S 4112
Bi-Tronics S 4973
Physical Optics S 5677

MULTIMEDIA, CD-ROM AND INTERNET DEVELOPMENT

International Datacasting Corporation 1703
Digigram 3912

CEA Digital Newsroom System 9661
IHS Communications Products I 3656
VDO Net Corporation I 4855
Scala Inc. I 4949
Telos Systems I 5250, 3006
Sun Microsystems I 5439
Magellan Geographix I 5453
HEURIS/Pulitzer M 6476
Adobe Systems M 6623
Merging Technologies M 6673
QUARK M 7138
Apple Computer Company M 7319
Macromedia M 7333
Sprint M 7451
TV on the Web/Gardy McGrath Int'l M 7534
LEL Computer Systems M 7941
Pacific Bell M 8133
Miro Computer Products M 8222
Capital Network M 8321
The Associated Press S 205
Optivision S 1347
Matrox Electronic Systems S 2732
Lucent Technologies S 2856
Adirondack Software S 2927
Adtec Productions S 3235
D-Vision Systems S 3625
TiltRac Corporation S 4574
Digimedia S 5358
Electric Image S 5416
Optibase Inc. S 5826
Norpak S 6026

POWER AND POWER CONDITIONING PRODUCTS

Coffey Sound Service 1428
Professional Sound Corporation 1517
Superior Electric/Warner Electric 1626
Hipotronics 1917
Northern Technologies 1918
Kay Industries 4116
Frezzi Energy Systems 5513
Christie Electric 6511
J-Lab Company 6532
Victory Battery Company 6809
PAG Ltd. 8279
IDX Technology 8430
Lightning Eliminators & Consultants 8756
Pro Battery 8759
Cine 60 8858
Control Concepts 9658
CEA Digital Newsroom System 9661
Anton/Bauer 10728
ProSource/Broadcast Marketing 11339
Staco Energy Products 11486
United States Broadcast 11907
Genelec M 8168
Equi-Tech Corporation S 1065
Ste-Man S 1220, 8279
K5600 S 1256
B&H Photo S 1508
Milestek S 3542
Best Power Technology S 4367
Cool-Lux S 4674
Bi-Tronics S 4973
Pulizzi Engineering S 6129

PRODUCTION FACILITIES AND SERVICES

PROVUW Professional Video Users 5258
TBC Consoles 5441
Optimum Productions 6661
J L Fisher S 2344

Digimedia S 5358
The Austin Company S 6160

PRODUCTION SWITCHERS, DVES, EFFECTS/COMPOSITING

NTV Int'l Corporation 34, 8366
Arrakis Systems 2406
Hotronic 5500
Tel-Test 5622
Sony Broadcast Products 5929
Lighthouse Digital Systems Inc. 6532
J-Lab Company 6532
Theatre Service & Supply 6747
Thomson Broadcast 7414
Sierra Video Systems 7437
Kramer Electronics 7873
Ross Video 8354
FOR.A Corporation 8514
Video Gainesville 8514
Videotek 8534
Broadcast Video Systems/BVS 8766
Prime Image 9285
Snell & Wilcox 9470
Philips BTS 9901
Tektronix 9914
Utah Scientific 9925
Quantel 9931
Panasonic Broadcast and TV Systems 10701
Scitex Digital Video 10714
Niche 10964
Feral Industries 11051
James Grunder & Associates 11051
Miranda Technologies 11425
Echolab 11638
Vistek Electronics 11640
5D 13945
Wohler Technologies LA 501, 9773
Broadcast Exchange M 7942
P E Photron S 1334
B&H Photo S 1508
Play Incorporated S 2819, 8676
Inscriber Character Generator S 3338
ATLIGHTSPEED S 4373

RECORDING MEDIA AND ACCESSORIES

Coffey Sound Service 1428
Apogee Electronics 1718
Fidelipac 1902
audiopak 2010
Broadcasters General Store 2019, 8865
Continental Electronics 2606
US Tape & Label 2824
Sony Broadcast Products 5929
Computer Expressions 6061
Rorke Data 6232
Professional Label Inc. 6361
McCurdy Radio Industries 6917
Research Technology Int'l/RTI 7345
Maxell Corporation of America 8825
Storeel 8837
Prime Image 9285
Philips BTS 9901
H L Dalis 11180
Carpel Video 11237
ASACA ShibaSoku 11914
Sun Microsystems I 5439
RGB Spectrum M 7438
Storage Concepts S 1225
BASf Jr Pro Sales S 1556
United Ad Label S 3029
Sierra Design Labs S 4814

BE FASTtrack

RF FEEDLINE, COMPONENTS, TOWERS AND SERVICES

Teracom Components	1324
Svetlana Electron Devices	1424
Flash Technology	1509
Penta Laboratories	1720
Utility Tower	2204
Magnum Towers	2324
Continental Electronics	2606
Shively Labs	3301
Kintronic Laboratories	3609
Electronics Research - ERI	3615
CTE International	3824
CPI Eimac Division	5604
Micro Communications	5607
SWR Inc.	5609
Thomson Tubes Electroniques	5751
Stainless	6811
MYAT	7002
BURLE INDUSTRIES	7007
Richardson Electronics	7107
Thomcast France	7414
Dielectric Communications	7976
COMWAVE/Communications Microwave	8683
Microwave Filter	8771
AVCOM of VA	8880
Scala Electronic	9053
EEV	9558
LDL Communications Inc.	9953
Rohn	11037
MCL Inc.	11353
Kline Towers	11867
RF Technology	11910
Cablewave Systems	11954
SierraCom	LA 204
California Amplifier	S 2351
Lockheed Martin Microwave-Narda	S 2472, 1501
IRTE SpA	S 2850

SATELLITE EQUIPMENT & SERVICES

Antenna Concepts	29, 8672
International Datacasting Corporation	1703
Studio Technologies	2104
Continental Electronics	2606
LNR Communications	4112
Ortel Corporation	5143
TBC Consoles	5441
Hotronic	5500
CPI Eimac Division	5604
Scientific-Atlanta	6713
GE American Communications	7429
PanAm Sat	7980
Advent Communications	8352
Leitch Inc.	8640
Comtech Antenna Systems	8753
Microwave Filter	8771
IRT Electronics Pty Ltd.	8864
AVCOM of VA	8880
Scala Electronic	9053
EEV	9558
Toko America	9567
Hughes Communications Inc.	10176
Standard Communication	10180
Cycle Sat	10272
Antenna Technology Corp./ATCI	10358, S3063
FloriCal Systems	10585
WSI	10980, M 6230
Andrew	11054
Taurus Communications Inc.	11185, S 2860
MCL Inc.	11353
Vistek Electronics	11640
RF Technology	11910

COMSAT Corporation
AT&T Skynet Satellite Services
Wegener Communications
Satellite Export & Engineering
DH Satellite
Television Engineering
BAF Communication
EASI Efficient Antenna Systems
Frontline Communications
SSE Telecom
Geneva Aviation
Divicom

11922
11934
11940
LA 103
LA 106
LA 301, 5628
LA 406, 11904
LA 503
LB 204, 11970
M 7747
S 1506
S 2225

Radyne Corporation S 2279
Xicom Technology S 2572
Deutsche Telekom S 2863
Channel Master S 2872
NII Norsat International S 3068
Dawn Satellite S 3071
Intelvideo S 3122
Vertex Communications S 3156
IDB Systems S 3165
Prodelin Corporation S 3171
New England Satellite Systems S 3175
Microspace Communications S 3360
Miralite Communications S 3463

"See us at NAB Booth 7424"

Switch with Compact Video Routing.

Osicom Technologies' compact video routing gives you the switch you need. The new Dynair System 2000 is so dense it offers over 1700 crosspoints in less than two inches of rack space.

Time To Switch?

And it's mighty powerful, with up to 100 MHz of video bandwidth.

From a Windows™ based control center, the Dynair System 2000 lets you switch video, audio and DS3 feeds over coax and fiber. Now that's functional connectivity.

So when it's time to switch, get connected with Osicom

Technologies for all your video distribution and fiber transmission products.

For more information and a FREE brochure on video switching, call ...

1-800-854-2831 or visit us at www.osicom.com



9990 Mesa Rim Road, San Diego, CA 92121 • 619/558-3960 • Fax 619/558-3988

Circle (124) on Free Info Card

BE FASTtrack

NTL
Orion Atlantic
ETM Electromatic
MicroNet Inc.
Intelsis Sistemas Inteligentes
RE America
Pulizzi Engineering

S 3466
S 3469
S 3476
S 3763
S 3766
S 4068
S 6129

C H Ellis
NBC News Archives
Nada-Chair
Sound Ideas
CBS News Archives
Cinebase Software
JMR Electronics
Wilson Case
Gennum Corp./Video-Broadcast
Weather Central
VizuALL

I 5556
M 6329
M 6979
M 7338, 5859
M 7533
M 7825
M 7938
M 8325
S 203
S 204, 11573
S 1517
S 2056
S 2060
S 2927
S 2928
S 2932
S 3019
S 3119
S 3176
S 3232
S 3542
S 4267
S 4958
S 4973
S 5658
S 6028
S 6126, 6921
S 6136
S 6140
S 6141
S 6171

IRTE SpA
IDB Systems
IMMAD Broadcast Services
Softel Ltd.
Digimedia
Weathernews
The Austin Company

S 2850
S 3165
S 4658
S 4672
S 5358
S 5674
S 6160

STUDIO & FACILITY SUPPORT PRODUCTS AND ACCESSORIES

Bradley Broadcast Sales 1506
Professional Sound Corporation 1517
EDX Engineering 1624
FirstCom/Music House 1906, 8779
Circuit Research Labs 2106
Arrakis Systems 2406
Continental Electronics 2606
Penny & Giles 3424
Autogram Corporation 3906
Henry Engineering 4012
Multimedia Accessories 4843
F J Westcott Company 4857
Horita 5155
Acoustic Systems 5255
TBC Consoles 5441
Videomagnetics 5518
Telepak San Diego 5532
Thermodyne International 5619
Zero Stantron 5625
Matthews Studio Equipment Group 5632
AMCO Engineering 5913
Computer Expressions 6061
Cinemills 6335
J-Lab Company 6532
Image Video 6557
Theatre Service & Supply 6747
Sprocket Digital 6860
Anvil Cases 6943
TASCAM 6952
Beck Associates 6954
American Studio Equipment 7158
Acoustical Solutions 7218
UniSet Corp./Kniff Woodcraft 7224
ESE 7227
Leitch Inc. 8640
TDC Tally Display Corporation 8679
Lightware 8853
Production Garden Library 8862
K&H Products Ltd. 8870
Peerless Industries 8873
Aircraft Production Music Libraries 8885
VidCAD Documentation Programs 9664
DeSisti Lighting/DESMAR 9876
KATA 10072
Audio Action 10360
Industrial Acoustics Company/IAC 10462
Techflex 11160
Hardigg Industries 11178
Marco Inc. 11182
Torpey Controls & Engineering 11238
Veelectronix 11239
Pro Cyc 11272
Miranda Technologies 11425
Avitel Electronics 11570
Nalpak Video Sales 11644
United States Broadcast 11907
AAVS/Sencore 11976
Egripment USA 11980
GEPCO International Inc. 11984
Specialized Products 13654
Informix I 4941
Magellan Geographix I 5453

Russ Bassett
Kart-A-Bag/Remin
Adirondack Software
Electrorack Products
Zero Cases Europe
Ergo-2000
Non-Stop Music
Crystal Computer
Anthro Technology
Milestek
Nelson Baldwin Cases
Wenger Corporation
Bi-Tronics
Solutions Custom Furniture
Nigel B Furniture
Winsted Corporation
RCI Systems Inc.
Image Design Film Tech Inc.
SVS Inc.
JLG Industries

S 2056
S 2060
S 2927
S 2928
S 2932
S 3019
S 3119
S 3176
S 3232
S 3542
S 4267
S 4958
S 4973
S 5658
S 6028
S 6126, 6921
S 6136
S 6140
S 6141
S 6171

TBCs, FRAME SYNCs AND VIDEO CONVERSION EQUIPMENT

Multimedia Accessories 4843
DPS 5453
Hotronic 5500
Sony Broadcast Products 5929
Pixel Instruments 6060
Television Equipment Associates 7215
Thomson Broadcast 7414
Kramer Electronics 7873
Nova Systems 8283
Ross Video 8354
Video Int'l Development 8364
FORA Corporation 8514
Video Gainesville 8514
Videotek 8534
Leitch Inc. 8640
Broadcast Video Systems/BVS 8766
Tekniche Ltd. 8817
AVS Graphics 8822
Link Electronics 9081
Prime Image 9285
Snell & Wilcox 9470
Tektronix 9914
Band Pro Film/Video 10072
AJA Video 10461
AJ Technology 10964
Feral Industries 11051
James Grunder & Associates 11051
Miranda Technologies 11425
Avitel Electronics 11570
VisteK Electronics 11640
AAVS/Sencore 11976
Inline M 6473
HEURIS/Pulitzer M 6476
Extron Electronics M 6633
RGB Spectrum M 7438
Genesis Microchip M 7535
LEL Computer Systems M 7941
PC Video Conversion M 8044
Optivision S 1347
B&H Photo S 1508
Artel Video Systems S 1560
Nortel/Northern Telecomm S 1763
Radyne Corporation S 2279
Raytheon Electronics/Semiconductors S 2353
Digital Vision S 2726
Intelvideo S 3122
NTL S 3466
Yamashita Engineering Mfg/YEM S 3635
Ensemble Designs S 4038
Norpak S 6026

SYSTEM INTEGRATORS, CONSULTANTS AND REPAIR SERVICES

Communications Data Services 1617
Dataworld 2624
TWR Telecom/Lighting 3904
Doty Moore Services 4938
Rules Service Company 4956
PROVUW Professional Video Users 5258
SMPTE 5516
Micro Communications 5607
Media Concepts 6360
Omicron Video 6746
Sprocket Digital 6860
Drake Automation Ltd. 6917
Beck Associates 6954
Thomcast France 7414
AF Associates 7432
COMWAVE/Communications Microwave 8683
Snell & Wilcox 9470
Tektronix 9914
Rees Associates 10458
NDG Phoenix 10460
EarthWatch Communications 10576
Kline Towers 11867
United States Broadcast 11907
RF Technology 11910
AAVS/Sencore 11976
IHS Communications Products I 3656
DSI Communications I 3748
Sun Microsystems I 5439
Shook Electronics USA LA 101
Satellite Export & Engineering LA 103
Wohler Technologies LA 501, 9773
EASI Efficient Antenna Systems LA 503
Screen Actors Guild M 6969
Broadcast Exchange M 7942
Walters-Storyk Design S 1503
Automated Weather Source S 2051
Divicom S 2225
DVS Digital Video Systems S 2550

TEST & MEASUREMENT EQUIPMENT

Altronics Research 1003
Bird Electronic Corporation 1327
Gorman-Redlich Mfg Company 1910
Selco Products 1922
Potomac Instruments 2017
Circuit Research Labs 2106
Delta Electronics 2109
Crown International 2418
Audio Precision 3124
Belar Electronics Lab 3312

WHEN HUGO BLEW OUR ANTENNAS AWAY,

UPDATE: STILL WATCHING!
Dozens of towers went down in the record breaking '95 Hurricane Season. **EVERY PiRod tower is still standing!**
For custom engineered tower design in high wind areas, call PiRod at (219) 936-4221.

OUR PIROD TOWERS JUST STOOD THERE AND WATCHED.



David Sharp
Vice President, Operations
The Virgin Islands
Telephone Company

"When Hugo hit, our solid rod PiRod towers just stood there and took it. The storm ripped away many structures in this area . . . I think our PiRod towers were among the very few towers left virtually undamaged. I remember . . . I purchased new antennas, called the people at PiRod for new brackets and we were back in business!"

Solid Rod, Solid Service, Solid Value



Solid rod, free-standing or guyed towers custom designed to your specifications.

For a free guide to tower selection and fast, courteous response to your requests for quotation, contact:



PIROD INC.

P.O. Box 128
Plymouth, Indiana 46563-0128
Telephone (219) 936-4221

Circle (109) on Free Info Card

www.americanradiohistory.com

BE FASTtrack

Burk Technology	3524
Coaxial Dynamics	3909
Faraday Technology Ltd.	5141
Horita	5155
Tentel Corporation	5511
Image Video	6557
Holiday Industries	6645
Sprocket Digital	6860
Dorrough Electronics	7209
ESE	7227
Philips TV Test Equipment	7643
Clark Wire & Cable	7871, 1721
Hewlett-Packard	8071, S 2200
Ross Video	8354
Videotek	8534
Leitch Inc.	8640
NuComm	8654
TDC Tally Display Corporation	8679
Leader Instruments	8760
Burst Electronics	8765
Broadcast Video Systems/BVS	8766
Multidyne Electronics	8783
Jensen Tools Inc.	8860
AVCOM of VA	8880
Scala Electronic	9053
Snell & Wilcox	9470
Philips BTS	9901
Tektronix	9914
Antenna Technology Corp./ATCi	10358, S3063
Feral Industries	11051
James Grunder & Associates	11051
James Grunder/Hamlet	11051
Video Accessory	11235
Modulation Sciences	11253
Electronic Associates	11334
Techni-Tool	11337
Pro-Bel Ltd.	11501
Chyron	11501, S 3632
Nalpak Video Sales	11644
ASACA ShibaSoku	11914
AAVS/Sencore	11976
Sencore/AAVS	11976
Wohler Technologies	LA 501, 9773
Data Check	S 2359
Lockheed Martin Microwave-Narda	S 2472, 1501
DVS Digital Video Systems	S 2550
Dubner International	S 2934
Graseby Optronics	S 3334
Milestek	S 3542
Norpak	S 6026
SyntheSys Research	S 6134
RCI Systems Inc.	S 6136

TV & ATV TRANSMITTERS, TRANSLATORS AND ANTENNAS

DB Elettronica	1027
Teracom Components	1324
Penta Laboratories	1720
Mier Comunicaciones S A	2412
Continental Electronics	2606
Technosystem SpA	3127
Shively Labs	3301
BEXT	3603
Electronics Research - ERI	3615
CTE International	3824
Econco Broadcast Service	3916
Astre System	4541
ABE Elettronica SPA	4940
Micro Communications	5607
SWR Inc.	5609
ITELCO SpA	5742
Harris Corp./Broadcast Division	5909, M 6628
Advanced Broadcast Systems	6560
Jampro Antennas Inc.	6709

BURLE INDUSTRIES	7007
Comark Communications/A Thomcast Co	7414
Thomcast France	7414
N Systems/NSI	7641
Dielectric Communications	7976
COMWAVE/Communications Microwave	8683
Kathrein-Werke KG	9053
Sira Sistemi Radio srl	9053
Scala Electronic	9053
EMCEE Broadcast Products	9237
Davicom Technology	9453
Snell & Wilcox	9470
LDL Communications Inc.	9953
Andrew	11054
Electronic Associates	11334
RF Technology	11910
Acrodyne Industries	11925
ITS Corporation	11949
Cablewave Systems	11954
Linear Equipamentos Electronic	I 4845
SierraCom	LA 204
Artel Video Systems	S 1560
General Instrument	S 2206
Divicom	S 2225
IRTE SpA	S 2850
Deutsche Telekom	S 2863
Intelsis Sistemas Inteligentes	S 3766
ABS spa	S 4063
Elettronica Industriale	S 4661

VEHICLES AND REMOTE SUPPORT EQUIPMENT

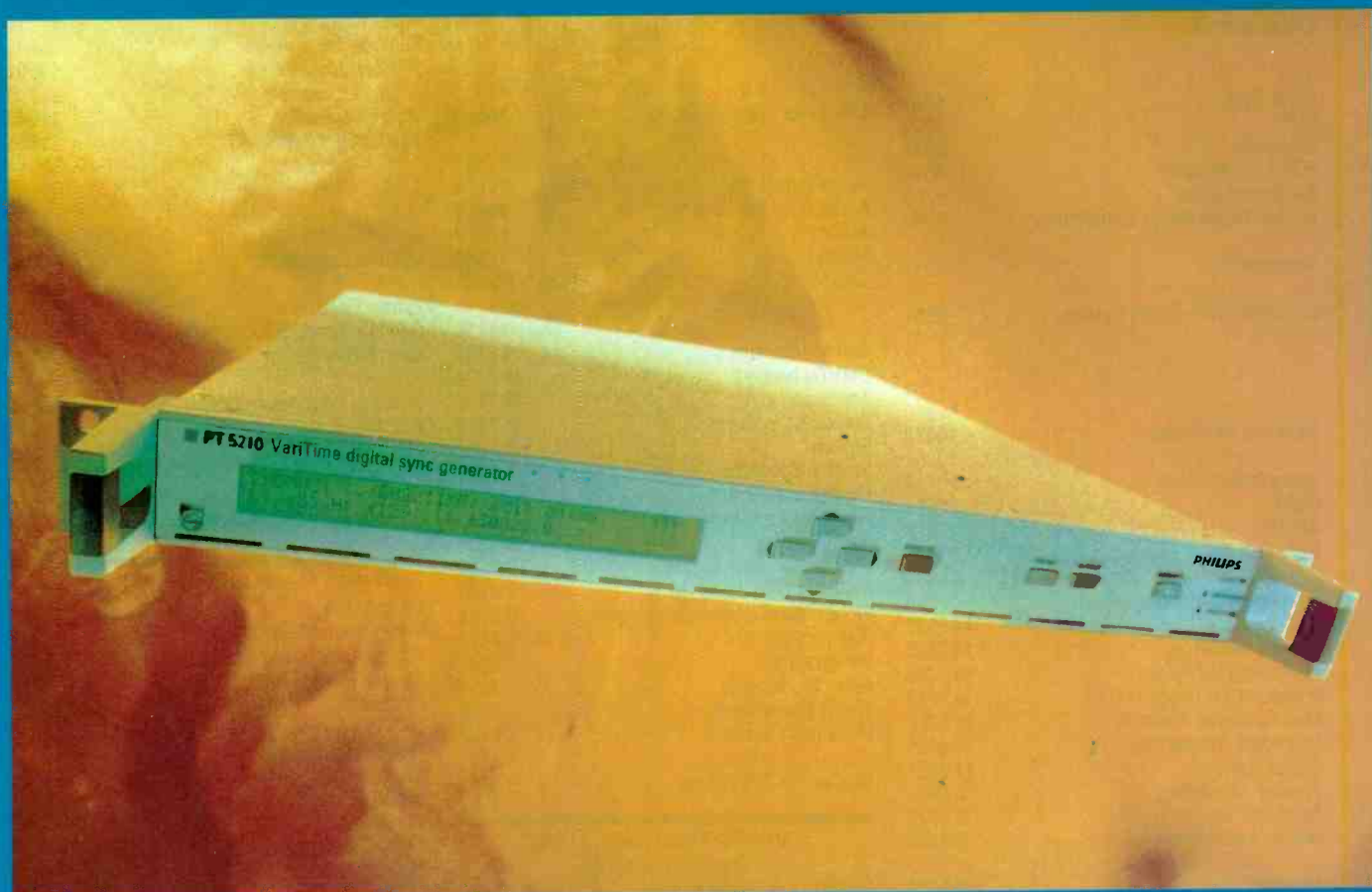
Potomac Instruments	2017
Studio Technologies	2104
Gentner Communications Corporation	2117
Moseley Associates	2602
Hughey & Phillips Inc.	3324
KD Kanopy Inc.	3427
Burk Technology	3524
E-Z UP International	4001
Coherent Communications	5142
Keystone Communications	5617
Chapman/Leonard Studio Equipment	5754
Beck Associates	6954
Microwave Radio	7421
AF Associates	7432
N Systems/NSI	7641
Advent Communications	8352
NuComm	8654
Telecast Fiber Systems	9281
Radamec Broadcast Systems	9376
Davicom Technology	9453
Philips BTS	9901
IPITEK Inc.	10182
Modulation Sciences	11253
ENG Mobile Systems	11347
Innovision Optics	11482
Will-Burt TMD Division	11800
RF Technology	11910
Wolf Coach	11930
Shook Electronics USA	LA 101
Calumet Coach	LA 202
Television Engineering	LA 301, 5628
NS Microwave	LA 307, 4544
Helicopters	LA 404
BAF Communication	LA 406, 11904
Frontline Communications	LB 204, 11970
Creston	M 6769
Geneva Aviation	S 1506
Telect	S 2356, M 7342
Wescam Systems Int'l	S 2553
TRON-Tek	S 2558
Crystal Computer	S 3176
Avitech Int'l	S 4272

LM Engineering	S 4972
Allen Osborne Associates	S 6079

VIDEO ACCESSORIES

Professional Sound Corporation	1517
TimeLine	2027
Eventide	4101
Pandora International	4559
Imagine Products	4561
FM Systems	4855
Macrovision	4957
Coherent Communications	5142
Horita	5155
Image Logic Corporation	5259
Videomagnetics	5518
Pixel Instruments	6060
Lighthouse Digital Systems Inc.	6532
J-Lab Company	6532
Image Video	6557
Sprocket Digital	6860
Evertz Microsystems	7160
Television Equipment Associates	7215
ESE	7227
Garner Industries	7230
Lipsner-Smith Company	7345
Research Technology Int'l/RTI	7345
Kramer Electronics	7873
Hewlett-Packard	8071, S 2200
Video Int'l Development	8364
Videotek	8534
Leitch Inc.	8640
TDC Tally Display Corporation	8679
Burst Electronics	8765
Broadcast Video Systems/BVS	8766
Tekniche Ltd.	8817
AVS Graphics	8822
Lightware	8853
Prime Image	9285
Davicom Technology	9453
Snell & Wilcox	9470
Ikegami Electronics	10431
AJ Technology	10964
Concept W Systems	10984
James Grunder/Hamlet	11051
Allen Avionics	11161
ProSource/Broadcast Marketing	11339
Miranda Technologies	11425
Avitel Electronics	11570
Vistek Electronics	11640
Nalpak Video Sales	11644
Comprehensive Video Group	11650
Folsom Research	M 6330
Diaquest	M 6341
Genesis Microchip	M 7535
BARCO Industries	M 7819, 11919
Axon Digital Design	S 1049
Sundance Digital	S 1228
Adrienne Electronics	S 2456
DVS Digital Video Systems	S 2550
Digital Vision	S 2726
Ergo-2000	S 3019
Intelvideo	S 3122
Anthro Technology	S 3232
Inscriber Character Generator	S 3338
NLT	S 3466
Milestek	S 3542
Ensemble Designs	S 4038
Sonic Solutions	S 4132
Premier Wireless	S 4358
Arco Electronics	S 4961
Bi-Tronics	S 4973
Winsted Corporation	S 6126, 6921
Display Devices	S 6131
Image Design Film Tech Inc.	S 6140

Invitation to go steady



Let's make things better.

PT 5210 VariTime™ digital sync generator
Philips TV Test Equipment, Copenhagen



We are taking the first step into the digital studio world... with our new VariTime™ digital sync generator.

As we don't live by a "take it or leave it" philosophy, we took the time to ask our users what they needed. Thus it copes with all timing problems you encounter in a digital studio. No delays are too big or too small for us to handle. Here it is. Ready to go steady in your studio for years to come.

Circle (110) on Free Info Card



PHILIPS

Tel. (800) 421 0888. Fax (201) 529 2109
e-mail: 102471.2241@compuserve.com
website: <http://www.ptv.ie.philips.com>

BE FASTtrack

SVS Inc S 6141
Sanders Media Adventures/C MAC S 7672

VIDEO EDITING SYSTEMS

DNF Industries 2019
Broadcasters General Store 2019, 8865
Imagine Products 4561
EVS Broadcast 5053
DPS 5453
Sony Broadcast Products 5929
Rorke Data 6232
PEP 7200
Videonics 8283
FOR.A Corporation 8514
Burst Electronics 8765
Editing Technologies Corporation 8784
JVC Professional Products Co 8801
Videomedia 8947
ASC Audio Video Corporation 9258
CEA Digital Newsroom System 9661
Philips BTS 9901
Tektronix 9914
Quantel 9931
AVID Technology 9940
Band Pro Film/Video 10072
Panasonic Broadcast and TV Systems 10701
Scitex Digital Video 10714
Niche 10964
Accom 10970
United Media 11027
Chyron 11501, S 3632
Comprehensive Video Group 11650
EMC M 6551
Genesis Microchip M 7535
McRoberts Software M 7746
Broadcast Exchange M 7942
Miro Computer Products M 8222
Interactive Images Inc. M 8229
Capital Network M 8321
Promax Technology M 8329
Sundance Digital S 1228
Adcom Electronics Ltd. S 1369
B&H Photo S 1508
Adrienne Electronics S 2456
Matrox Electronic Systems S 2732
Play Incorporated S 2819, 8676
Discreet Logic S 2906
Dubner International S 2934
Fast Forward Video S 3332
D-Vision Systems S 3625
Audio Intervisual Design/Sanken S 3638, 8777
Soft-Touch S 4072
FAST Electronics USA S 6120

VIDEO RECORDING, STORAGE, PLAYBACK AND SERVER SYSTEMS

Doremi Labs 1619
DNF Industries 2019
Superscope Technologies/Marantz 2102
EVS Broadcast 5053
DPS 5453
Sony Broadcast Products 5929
Toshiba Corporation 6043
CMC Technology 6211
Hitachi Denshi America Ltd. 6705
McCurdy Radio Industries 6917
Video Data Systems 6928
Calculated Industries 7009
AF Associates 7432
Hewlett-Packard 8071, S 2200
FOR.A Corporation 8514
Odetics Broadcast 8522
Pinnacle Systems 8658

JVC Professional Products Co 8801
AVS Graphics 8822
Videomedia 8947
Channelmatic 9164
ASC Audio Video Corporation 9258
QuVis Inc. 9564
CEA Digital Newsroom System 9661
Philips BTS 9901
Tektronix 9914
Quantel 9931
AVID Technology 9940
Enterprise Systems Group 10567
FloriCal Systems 10585
Panasonic Broadcast and TV Systems 10701
Scitex Digital Video 10714
AJ Technology 10964
Accom 10970
Matco 11340
Chyron 11501, S 3632
MountainGate 11914
AAVS/Sencore 11976
Sun Microsystems I 5439
DMI/Techexport M 7274
Andataco M 7330
Broadcast Exchange M 7942
Ciprico S 1222
Storage Concepts S 1225
Sundance Digital S 1228
Film & Video Systems S 1253
P E Photon S 1334
DVS Digital Video Systems S 2550
MMS Multi Media Systems S 2550
Pioneer New Media Technologies S 2738
Play Incorporated S 2819, 8676
Viewgraphics S 3042
Adtec Productions S 3235
Fast Forward Video S 3332
Mega Drive Systems S 4120
Sierra Design Labs S 4814
SeaChange Technology S 5463

VIDEO ROUTING AND DISTRIBUTION

VideoQuip Research Ltd. 1502
Switchcraft 2924
Radio Design Labs - RDL 3724
Multimedia Accessories 4843
J-Lab Company 6532
Lighthouse Digital Systems Inc. 6532
Image Video 6557
Sprocket Digital 6860
Television Equipment Associates 7215
ESE 7227
Di-Tech Inc. 7341
Sierra Video Systems 7437
Kramer Electronics 7873
Nova Systems 8283
Ross Video 8354
Videotek 8534
Leitch Inc. 8640
Burst Electronics 8765
Broadcast Video Systems/BVS 8766
Multidyne Electronics 8783
Datatek 8814
Tekniche Ltd. 8817
Kings Electronics Company Inc. 8851
IRT Electronics Pty Ltd. 8864
Knox Video Products 8867
OpAmp Labs 8884
Link Electronics 9081
Telecast Fiber Systems 9281
Digipath Video 9453
Snell & Wilcox 9470

Sigma Electronics 9883
Philips BTS 9901
Tektronix 9914
Utah Scientific 9925
IPITEK Inc. 10182
PESA Switching Systems 10958
AJ Technology 10964
Video Accessory 11235
Miranda Technologies 11425
Pro-Bel Ltd. 11501
Avitel Electronics 11570
Vistek Electronics 11640
Sandar Electronics A/S 11864
ASACA ShibaSoku 11914
Canare Cable 11944
ADC Telecommunications 11958
AAVS/Sencore 11976
VDONet Corporation I 4855
Inline M 6473
Extron Electronics M 6633
Gennum Corp./Video-Broadcast S 203
Axon Digital Design S 1049
Telect S 2356, M 7342
Interlace Engineering Corporation S 2559
AVP Mfg & Supply S 3020
Milestek S 3542
Ensemble Designs S 4038
Avitech Int'l S 4272
Bi-Tronics S 4973

WIRE, CABLE & CONNECTORS

Neutrik USA 1321
Coffey Sound Service 1428
Professional Sound Corporation 1517
Apogee Electronics 1718
Switchcraft 2924
DGS Pro Audio 3728
Multimedia Accessories 4843
Nemal Electronics International 5061
TECNEC/Technical Necessities 5158
Whirlwind 5747
Audio Accessories 5759
Connectronics 6512
Trompeter Electronics 7211
Clark Wire & Cable 7871, 1721
LEMO USA Inc. 8835
Kings Electronics Company Inc. 8851
Jensen Tools Inc. 8860
AVCOM of VA 8880
VEAM 8882
Telecast Fiber Systems 9281
Prime Image 9285
Belden Wire and Cable 9880
Techflex 11160
H L Dalis 11180
Yale Electronics 11265
Mohawk/CDT Broadcast Cables 11283
Nalpak Video Sales 11644
Canare Cable 11944
ADC Telecommunications 11958
AAVS/Sencore 11976
GEPCO International Inc. 11984
Inline M 6473
Extron Electronics M 6633
JMR Electronics M 7938
Marshall Electronics S 1931
The Rip-Tie Co S 2446
AVP Mfg & Supply S 3020
Milestek S 3542
Bittree S 3775
Delco Wire & Cable S 3972
Bi-Tronics S 4973
RCI Systems Inc. S 6136
West Penn Wire/CDT S 6138

THE MORE HYPE THERE IS IN BROADCASTING,
THE LESS LIKELY ANYONE IS TO BELIEVE IT.

There have been plenty of wild claims flying around out there about digital video. So when we introduced a video disk recorder with integrated RAID for about the price of a broadcast digital VTR, well, let's just say people found it hard to swallow.

The Hewlett-Packard MediaStream Disk Recorder is the newest member of our MediaStream family. It works perfectly well on its own, or in concert with our MediaStream Broadcast Server. And like all our products, it has plenty of room to grow.

You can start with just two channels, or as many as five. It stores up to nine hours of broadcast-quality programming, and it even supports fiber channel networking. And all you need to get started is just \$65,000* and a little space in a standard rack.

The HP MediaStream Disk Recorder can make the leap to digital a lot less of a leap. Call **1-800-FOR-HPTV**. Better yet, see it for yourself at NAB. We'll be in Hall 5 South, booth 8071, at the Las Vegas Convention Center and booth S-2200 at the Sands Convention Center.

We'll show you digital video you can believe in.



The \$65,000 HP MediaStream
Disk Recorder: Digital
video comes down to earth.*

*U.S. list price
©1997 Hewlett-Packard Co. TMVID708/BE

 **HEWLETT®
PACKARD**

Circle (118) on Free Info Card

www.americanradiohistory.com

*Our customers are at the
forefront of video technology*

The Only Company

bridging computer and video
technology to **deliver today**
uncompressed
long-format video disk
recorders for both RAID
and VTR replacement.

*"The Sierra Quickframe" is the primary interface between our CGI
department and video operations. There is no other product that can do
what it does! Our SGI Challenge goes to a single Quickframe and all of
our video material from over 30 graphics people ends up on it. It's the most
reliable disk recorder that we have in-house."*

*— Austin Williams, Director of Systems Integration
R/Greenberg and Associates, NY, NY*

*"Sierra's products are the heart of our video server design. Our
workstations run through a SCSIframer™ to a Quickframe and all
shots, whether live action, CGI or animation are stored there. We
can call up any shot from the Quickframe and view the results on
BVM monitors from any of 13 viewing stations."*

*— Kipp Aldrich, Senior Systems Engineer
Industrial Light & Magic, San Rafael, CA*

*"We use 5 Quickframes all over the house...for on-line editing, CGI,
visual effects, transfers and telecine. In telecine, we have 2 Quickframes
connected to our Indigo using Sierra's SCSIframer. Configured for 4:4:4
recording, we use them for caching off, steady gating, and scene-to-scene
color correction. Sierra's products deliver the only economical solution."*

*— Steve Snyder, Director of Engineering
Complete Post, Hollywood, CA*

CBS
CNN
Complete Post
Cornell University
Cutters
Digital Domain
Downstream Video
Dreamworks
Empire Video
Encore Video
Fox Animation
Fox Sports
General Motors
Group W Satellite
Hanna Barbera
Industrial Light & Magic
Manhattan Transfer/Edit
National Boston
Video Center
Peachtree Post
Pixar
R/Greenberg and
Associates
Swell Pictures
Tape House Digital
Texas A&M University
The Family Channel
Tippet Studios
Unitel
US Navy
Warner Brothers
WPIX TV
WTTG
...and hundreds more.

Call

800-400-8002

or visit our web site at
<http://www.sdlabs.com>

Circle (117) on Free Info Card

NAB Booth 54814



HIGHER THINKING

October 24-26, 1997 • Sands Expo Center, Las Vegas

FOR GROUND-BREAKING INNOVATION IN ENTERTAINMENT DESIGN AND TECHNOLOGY... *Hit the jackpot at LDI!*



LIVE PERFORMANCE ♠ THEMED ENVIRONMENTS

CLUBS ♦ CONCERTS ♥ THEME PARKS ♣

CRUISE SHIPS ♠ SPORTS FACILITIES ♦ PERFORMING

ARTS VENUES ♥ RETAIL ♣ RESTAURANTS

CORPORATE & SPECIAL EVENTS

ARCHITECTURAL LIGHTING ♠ FILM ♦ TELEVISION

The fastest-growing themed entertainment capital of the world—Las Vegas!

CELEBRATE THE 10TH
ANNIVERSARY OF
NORTH AMERICA'S
LARGEST
ENTERTAINMENT
DESIGN AND
TECHNOLOGY SHOW.

LDI 97
LAS VEGAS

Be a winner at LDI97, with more than 300 international manufacturers and distributors in over 200,000 sq. ft. of exhibits. Hot new products right off the drawing board. The latest in lighting, audio, pyrotechnics, lasers, hardware, software, staging and rigging. Workshops and hands-on tutorials. Backstage Las Vegas tours. And a special 10th anniversary celebration. All at Lighting Dimensions International—LDI97.

PRESENTED BY

LIGHTING DIMENSIONS

TCI

S&VC
sound & video contractor

VIDEO

AND **ESTA**
ENTERTAINMENT SERVICES & TECHNOLOGY ASSOCIATION

TOGETHER WITH

millimeter

BROADCAST
engineering

WORLD BROADCAST
News

IMAGE
METAL STORE

SHOPPING
CENTER

For more information call Intertec Presentations • 1-800-288-8606 • Fax: 1-303-770-0253

There's no reason to miss the NAB Convention this year.



In fact, invite your whole crew to attend the 1997 NAB Convention on *Broadcast Engineering's* ground breaking Internet Show Daily site. Be there all four days beginning April 6, hearing the buzz, getting news as it occurs, and learning about new products as they're announced. All this with a click of your mouse.

Now all of your staff will have the latest show information at their desks while they're keeping your signal on the air and productions on time.

The industry's first Internet Daily features *Broadcast Engineering's* editorial staff and includes topical updates from the editorial teams of *BE Radio*, *Lighting Dimensions*, *Millimeter*, *Satellite Communications*, *TCI*, *Video Systems*, and *World Broadcast News*. Cover all the NAB '97 hot buttons with the industry's leading group of communications magazines.

Be a part of the NAB Convention with the best at <http://www.broadcastengineering.com> April 6 through September 12, 1997.

For Internet Daily advertising opportunities, contact The Eidolon Group Inc., 800-901-8202 or e-mail robt@eidolongroup.com.

EIDOLON™

The stuff that dreams are made of...

BROADCAST
engineering





Exhibitor Showcase

A comprehensive listing by company of product introductions and showings at NAB '97.

The best way to know who's got what is by checking the **BE Exhibitor's Showcase**. Listed alphabetically, exhibitors are shown along with their booth number and a brief description of what they plan to have in their booth.

The listings are based on information provided to us as of Feb. 10. **Colored listings** indicate advertisers in this issue. For more information on these companies, see the advertiser's index on p. 300.



360 Systems 1724
Introducing: enhanced versions to ShortCut - stand-alone digital audio call-in editor; DigiCart/II - random access digital audio recorder.
Circle (250) on Free Info Card

5D Ltd. 13945
Introducing: Monster series SFX plug-ins for Discreet Logic and Digital Fusion systems.
Circle (251) on Free Info Card

ABCNews VideoSource (Archives) M 7575
Circle (252) on Free Info Card

ABE Elettronica S.p.A. 4940
Introducing: new updated line of TV transmitters; microwave links for fixed, portable, ENG operation; antennas, radiation systems.
Circle (253) on Free Info Card

A.B.S.S.p.A. S 4063
VHF-UHF transmitters up to 60kW. FM transmitters to 60kW; directional and hybrid couplers, as well as RF adapters and accessories.
Circle (254) on Free Info Card

Accom Inc. 10970
Introducing: WSD/Xtreme video disk array.
Circle (255) on Free Info Card

AccuWeather Inc. 10564
Featuring: UltraGraphix-32; UltraGraphics ULTRA weather systems; FirstWarn 2000, 3000 for crawls, maps, icons to notify viewers of severe weather; AccuNet On-Line weather information, graphics for your web site.
Circle (256) on Free Info Card

Acoustical Solutions Inc. 7218
Introducing: AlphaTech ceiling tiles; Audioseal sound barriers; Alpha Enviro hanging baffles.
Circle (257) on Free Info Card

Acoustic Systems 5255
Introducing: modular control room and studio designs; the Acoustic-Rated Glass Door.
Circle (258) on Free Info Card

Acrodyne Industries Inc. 11925
Introducing: UHFDTV transmitters; 15-20kW DTV transmitter/UHF.
Circle (259) on Free Info Card

Adcom Electronics Ltd. S 1369
Featuring: Night Suite non-linear production system.
Circle (260) on Free Info Card

ADC Telecommunications Inc. 11958
Featuring: digital transport system, with remote drop or add; time-delayed patching; delay compensation video patching; digital video jacks; analog and serial digital video panels; video/audio modular patchbay; CAPS component analog patching system; FO cable management system for smaller fiber networks.
Circle (261) on Free Info Card

Adirondack Software Corporation S 2927
Introducing: improved user interface featuring calendar view of events, streamlined entry of multiple jobs per employee per shift, improved time line reporting for multi-event scheduling system for automation of manpower scheduling in broadcast and live events.
Circle (262) on Free Info Card

Adobe Systems M 6623
Featuring: Adobe Premiere for Macintosh and Windows.
Circle (263) on Free Info Card

Adrienne Electronics Corporation S 2456
Featuring: small routing switchers; machine control products; time-code products.
Circle (264) on Free Info Card

Adtec Incorporated S 3235
Featuring: Ad-Maestro digital or analog commercial insertion controller; Virtuoso and Soloist digital video players.
Circle (265) on Free Info Card

Advanced Audio Visual Systems 11976
Introducing: @3 applications software, @architecture, @pplications for @utomation for management of automated processes in TV centers; @3-on Air automated playback software; @3-remote local, remote surveillance and backup operations for TV sites; video assist multilingual management software; Imaging range Quartet A and accessories; DAs, dual-channel digital audio signal change over; digital linear keyer; analog video DA.
Circle (266) on Free Info Card

Advanced Broadcast Systems 6560
Featuring: Computer-supervised IOT UHF TV transmitters, remote controls; BCD pulsers for klystron-based systems.
Circle (267) on Free Info Card

Advanced Designs Corporation 10376
Introducing: Live Radar Composite Display multiple live radars on one display; Depix reduces "blocky" data associated with street-level mapping; EZ-Clicks mouse only input for Storm Path analyzer and street-level mapping.
Circle (268) on Free Info Card

ATSC-Advanced Television Systems Committee 31
Circle (269) on Free Info Card

Advantage Television Software 8370
Circle (270) on Free Info Card

Advent Communications Ltd. 8352
Introducing: 1.5m Newswift DSNG system; dual/tri-band Mantis flyaway SNG packages; SDNG trucks; video exciters; data converters; satellite antennas; fixed earth stations; remote control and monitoring systems.
Circle (271) on Free Info Card

A.E.Q. 2412
Featuring: audio codecs; hard-disk automation system; audio mixers; multiconference telephone system; digital hybrids, line extender; telephone terminal equipment.
Circle (272) on Free Info Card

Aerial Films Inc. 10966
Introducing: GyroCam 36X, GyroCam 20X gyro stabilized cameras for TV helicopters.
Circle (273) on Free Info Card

A.F. Associates Inc. 7432
Featuring: designs, engineers and fabrication of TV facilities, systems for broadcast, cable, professional and corporate markets; Turnkey systems integration; engineering and system design consulting; project management; server systems, solutions for video archive, program layout and networking.
Circle (274) on Free Info Card

Aircraft Production Music Libraries 8885
Featuring: The American Music series; Rock Sweepers and IDs; Ads Up! music for commercials.
Circle (275) on Free Info Card

AJA Video 10461
Featuring: component analog to serial digital and NTSC/PAL to 4:2:2 serial digital converters; 1RU rack frames for converter products; serial to analog, serial/parallel converters; serial 4:2:2 to NTSC/PAL encoder.
Circle (276) on Free Info Card

AJ Technology 10964
Introducing: UniBox universal video processors, serial digital and analog video image processor, TBC, frame sync, standard converter, format transcoder; Video MOP series modular video processing products; digital video recorder with single, dual and dual RAID recorders; serial digital color corrector.
Circle (277) on Free Info Card



AKAI Digital 2524
Featuring: digital audio recording equipment, workstations.

Circle (278) on Free Info Card

AKG Acoustics 6948
Introducing: C480B+CK69, C414B TLII, D230, C577, C3000 microphones; K240M headphones.

Circle (279) on Free Info Card

Alamar USA Inc. 6337
Introducing: a control system for remote automation systems through wide area networks.

Circle (280) on Free Info Card

Alden Electronics 8370
Featuring: weather graphics systems; NEXRAD data demonstrations.

Circle (281) on Free Info Card

Alesis Corporation 3618
Featuring: digital audio products, multitrack recorders, remote-control equipment.

Circle (282) on Free Info Card

Alias/Wavefront Technologies S 4820
Videographics software packages for artistic composition, animation, 3-D modeling; interactive photorealistic rendering.

Circle (283) on Free Info Card

Allen Avionics Inc. 11161
VNE-75-3 3-channel video noise eliminator; VIT-75-3 3-channel isolation transformer; HEC-3000 3-channel, HEC-2000-H "heavy-duty" and HEC-4000 RGB component hum eliminators; HDTV, CCIR-601, miniature low-pass filters.

Circle (284) on Free Info Card

Allen Osborne Assoc. Inc. S 6079
Featuring: Hilomast telescopic pneumatic-operation masts.

Circle (285) on Free Info Card

Alpha Video Electronics LA 205
Circle (286) on Free Info Card

Altronics Research Inc. 1003
Featuring: digital calorimeters for water-cooled dummy loads and heat exchangers; air-cooled loads.

Circle (287) on Free Info Card

Amco Engineering Company 5913
Featuring: equipment enclosure systems.

Circle (288) on Free Info Card

Amek U.S. Operations Inc. 7343
Introducing: System 9098 twin mic amplifier; System 9098 dual compressor-limiter; Digital Mixing System; Recall by Langley computer-assisted console.

Circle (289) on Free Info Card

American Capital Group S 2548
Circle (290) on Free Info Card

American Eagle Financial Group S 4572
Circle (291) on Free Info Card

American Studio Equipment 7158
Featuring: motion picture equipment; grip products; rental programs.

Circle (292) on Free Info Card

AMS NEVE 8810
Featuring: large multiformat all-digital mixing console, optional Audio-File recorder/editor;

Capricorn digital console for operational flexibility, speed, large-scale multitrack recording, mixing, overdubbing; Logic 3 compact digital mixer companion to Audio File recorder/editor; 55 Series analog console.

Circle (293) on Free Info Card

Anchor Communications 11170
Introducing: PBS-100 portable DC battery supply unit for PortaCom wired intercom systems; operates 8-10 headset stations using 6 D cell batteries.

Circle (294) on Free Info Card

Ancor Communications S 1027
Circle (295) on Free Info Card

Andataco M 7330
Introducing: high-performance digital Giga-RAID storage systems to increase data accessibility and user productivity, reducing unplanned system downtime.

Circle (296) on Free Info Card

Andrew Corporation 11054
Dual HMD antenna; Alpac antenna & tower system; HS9HP HELIAX coaxial cable; 2.4m SNG antenna; type-approved earth station antennas; rectangular waveguide; pressurization equipment; terrestrial microwave antennas; rigid transmission line.

Circle (297) on Free Info Card



Angenieux SA 7013
Introducing: 15x8.3AIF digital generation broadcast lens; f/1.7 2/3-inch, compatible with 16/9 format; 22x7.5AIF studio lens; 62x9.5AIF OB lens; Cine Digital Kit film lens and accessories for camcorder, T1.9 aperture, 11.5x5.3 wide angle F5.3-61mm zoom range and 11x8.3 lens for electronic cinematography, HDTV digital cameras; Super 16 93 degree wide angle 7-81mm T2.4 lens, 0.6m MOD.

Circle (298) on Free Info Card

Antenna Concepts Inc. 29, 8672
Featuring: UHF, VHF antennas in slot, panel and corner reflector types; high gain CP for LPTV; CP full-band FM panel transmit antennas; transportable omnidirectional VHF antennas.

Circle (299) on Free Info Card

Antex Electronics S 4279
Circle (300) on Free Info Card

Anthro Corporation S 3232
Introducing: rack-based workstations, 60-inch and 72-inch.

Circle (301) on Free Info Card

Anton Bauer 10728
Introducing: InterActive 2000 PowerCharge features camera operation from mains; Logic Series charging, diagnostic add-on modules; ProPac, TrimPac digital battery with fuel gauge interface to camera viewfinder; Gold Mount accessories; Ultralight compact on-camera light.

Circle (302) on Free Info Card

Aphex Systems 4103
Introducing: model 2020 FM audio processor.

Circle (303) on Free Info Card

Apogee Electronics Corporation 1718
Introducing: FC-8 digital audio format converter; APOgee CD-recordable; AD-1000, AD-

1000E 20-bit A/D, D/A converters; Apogee Master DAT; Wyde Eye digital cable.

Circle (304) on Free Info Card

Apple Computer Inc. M 7319
Featuring: personal computers, multimedia equipment.

Circle (305) on Free Info Card

Arco Electronics S 4961
Featuring: a broad selection of filters, delay lines and duplexers for video, telecommunications and broadband media.

Circle (306) on Free Info Card

Arrakis Systems Inc. 2406
Featuring: digital audio workstations; video switchers with audio follow and control from multiple locations.

Circle (307) on Free Info Card

Arriflex Corporation 6547
Introducing: Arrilux 125 Pocket Par; ArriSun 200, 575; Arri Compact 125, 200W; Arri T12 Fresnel; 435 integrated video assist; universal follow focus FF-4; shift and tilt lenses.

Circle (308) on Free Info Card

ArtBIT M 7444
Circle (309) on Free Info Card

Artel Video Systems S 1560
Introducing: MegaLink multichannel D-1 video fiber-optic transport system; DigiLink NTSC/PAL fiber-optic video transport system.

Circle (310) on Free Info Card

Asaca/ShibaSoku Corp. of America 11914
Introducing: AM140, AM665, AM1200 digital video disc archiving; CM202H 20-inch, CM323H 32-inch HDTV color monitors; CMC42NP 42-inch Plasma display; TG15B6-HDTV digital test signal generator; RT37A, RT83B TV channel signal generators.

Circle (311) on Free Info Card

ASC Audio Video 9258
Introducing: VR300 broadcast video server; VCR300 Fibre Channel RAID storage system; NEWSFlash non-linear editing system.

Circle (312) on Free Info Card

The Associated Press S 205
Featuring: AP News Center; AP Graphics Room; SNTV; The Wire; AP Prep Packages; APTV; AP Express; AP Radio.

Circle (313) on Free Info Card

Associates Leasing Inc. S 1501
Circle (314) on Free Info Card

Astre Systems Inc. 4541
Introducing: SoftStart beam power switching device; HDTV-ready MSDC UHF TV transmitter.

Circle (315) on Free Info Card

ATCi/Antenna Technology 10358, S3063
Featuring: spectrum analyzer, satellite receiver, monitor; multibeam antennas; PROLine electronics; voice, data systems; satellite video-conferencing equipment.

Circle (316) on Free Info Card

ATI-Audio Technologies Inc. 5527
Introducing: ATI portable and studio stereo mixers, expanders, MXS100, XPS100; featured: Vanguard series consoles; Micro-Amp series modular and self-contained mic, line and DAs; power amps, headphone drivers, interface amps, audio processors, studio metering systems, NanoAmp mixers.

Circle (317) on Free Info Card

Atlantic Commercial Alliance Inc. S 4979
Circle (318) on Free Info Card

ATLIGHTSPEED S 4373
Introducing: Ultra acceleration image processing hardware and software.

Circle (319) on Free Info Card

AT&T 11934
Featuring: satellite communications services.

Circle (320) on Free Info Card

The second in a series of **DTV** updates from Comark.

Premiering
at NAB.
See us at
booth #7414.

Why Comark should be your digital partner.

Only Comark has a complete family of products and services ready for the digital age. UHF and VHF. Tube and Solid State. High and Low power. Analog and Digital.



The IOX DUAL USE system, pioneered by Comark, broadcasts analog today and digital tomorrow.

It's happened—DigitalTV is here. To make a painless transition, you need more than a new transmitter—you need a strong systems partner.

Count on Comark. As the dominant UHF transmitter supplier and founding member of the DTV research team, we're the only

company that can meet your requirements for the digital age. Whatever your needs, UHF or VHF, our systems are designed for ease of use, low cost maintenance and no-hassle installation.



Unparalleled quality and service.

Comark offers comprehensive installation, support and maintenance services—around the clock, and around the



The new Optimum line of VHF transmitters are the first VHF systems designed for all digital standards.

world. Based on an independent survey, Comark is consistently rated by broadcasters as having the best after sales support in the industry.



Shouldn't Comark be your digital partner?

Our vision is being shared. NBC, Paxson and several major groups have recently selected Comark to provide digital systems and engineering services to all of their owned-and-operated stations.

Want the answer? Get our free guide.

Call us today at (800) 688-3669 and see the innovative ways Comark can get you up to digital speed. Or you can request it via e-mail from erainey@comarkcom.com.



The AdvantageTV series of UHF transmitters was the first designed to meet the ATSC standard.



COMARK

500 Horizon Drive • Suite 503 • Chalfont, PA 18914
TEL: (215) 822-0777 • FAX: (215) 822-9129
www.comarkcom.com

COMARK
25th
anniversary
1972-1997



Emmy Award
Winner for
Engineering
Excellence

Stay tuned for our third in a series of DTV updates,
a new suite of DTV Transitional Services.

Circle (125) on Free Info Card

www.americanradiohistory.com

© 1997 Comark Communications, Inc.



ATTO Technology Inc. **M 8347**
Introducing: Express PCI-PS SCSI host adapter; AccelWare software for workgroup volume management.

Circle (321) on Free Info Card

Audi-Cord Corporation **2006**
Featuring: audio cart recorders/players.
Circle (322) on Free Info Card

Audio Accessories Inc. **5759**
Featuring: audio jack panels, jacks; pre-wired audio patch panels; patch cords, holders; Polysand; video panels; RS-422 patching; Edac connectors, accessories; nickel-plated patch cords.

Circle (323) on Free Info Card

Audio Action **10360**
Featuring: production music library on CDs.

Circle (324) on Free Info Card

Audio Developments Ltd. **2424**
Introducing: AD144 studio and OB mixer, 40/P+2 auxiliaries, extensive monitor features and optional comm module, 12-24 channel frames; AD149 for film and drama use, 2 O/P + 2 aux, continuously variable gain, comprehensive EQ, channel inserts, limiters; AD160, AD261, Mercury, AD146, AD148 mixers.

Circle (325) on Free Info Card

Audio Intervisual Design **S 3638, 8777**
Sanken Audio Systems microphones CSS-5 shotgun stereo, COS-11 lavalier, CU-41 double condenser; JB Technologies dB 3000 digital optimizer, AD122 A/D converter, DA122 D/A converter; Brainstorm Electronics time-code products: SA-1 analyzer, SR-3 repair kit, SR-15+ distripalizer, SR-26 dual distributor-reshaper, SR-1/SR-2 universal refresher, TB-4 remote talkback.

Circle (326) on Free Info Card

Audiomation/Sellmark **1301**
Distributor of audio products.

Circle (327) on Free Info Card

audiopak Inc. **2010**
Featuring: audio recording media.

Circle (328) on Free Info Card

Audio Precision **3124**
Introducing: SWR-2122 switchers; featuring: System One, System Two Dual Domain test systems; ATS-1 audio test system.

Circle (329) on Free Info Card

Audio Processing Technology **1727**
Featuring: products for high-quality audio over ISDN and Switch-56 digital circuits; World-Net-compatible audio codecs studio links, remote feeds.

Circle (330) on Free Info Card

Audio-Technica U.S. Inc. **6311**
Featuring: UniTools remote-powered in-line mic accessories; AT@-7174 UHF synthesized wireless system; ATW-1237 VHF wireless system with hand-held mic/transmitter; 1100 series VHF wireless systems; AT4041 transformerless studio capacitor mic; Quad Mic multi-element boundary mic; AT8446 pop filter.

Circle (331) on Free Info Card

Audio USA **3727**
Featuring: diversity wireless microphone systems.

Circle (332) on Free Info Card

Auditronics Inc. **3018**
Featuring: audio mixers for radio, TV, production; IFB/Mix-Minus system.

Circle (333) on Free Info Card

The Austin Company **S 6160**
Featuring: consulting services for broadcast and communications clients with site and facility analysis, strategic master planning, requirements programming, space planning, architectural and engineering designs, technical systems design and integration, project management, construction services.

Circle (334) on Free Info Card

auto.des.sys **M 7963**
Introducing: form.z v2.9, form.z RenderZone v2.9 graphics, animation equipment.

Circle (335) on Free Info Card

Autogram Corporation **3906**
Introducing: Solution-20 rack frame system holding up to 10 cards; RC-1 relay card, DA-3 distribution amp card, SMA-10W amplifier, MPC-1 mic processor card.

Circle (336) on Free Info Card

Autologic Information Inc. (aii) **S 4076**
Introducing: high-speed laser cinema recorder, images 4k files created digitally with unequaled quality on EK-5244 color intermediate stock.

Circle (337) on Free Info Card

Automated Weather Source **S 2051**
Featuring: real-time local weather for broadcasters and the Internet; school weather network; AWS OnLine integrated local weather network with internet; AWS JavaWx first application to provide live real-time neighborhood weather to WEB; participation of radio/TV stations, schools, museums, science centers, hospitals, chamber of commerce newspapers and business in worldwide network.

Circle (338) on Free Info Card

AutoPatch, Div. of XN Tech. **M 8351**
Circle (339) on Free Info Card



Get it done fast with Hannay cable reels.

- One or Two Person Transport • Custom XLR & BNC Connector Patterns
- Fast Manual Rewind • Lightweight & Stackable



Hannay Reels
The reel leader.

553 State Route 143, P.O. Box 159, Westerlo, NY, USA 12193-0159 • Phone 1-518-797-3791 • Fax 1-800-REELING • www.hannay.com

Circle (126) on Free Info Card

The second in a series of **DTV** updates from Comark.

Premiering
at NAB.
See us at
booth #7414.

Why Comark should be your digital partner.

Only Comark has a complete family of products and services ready for the digital age. UHF and VHF. Tube and Solid State. High and Low power. Analog and Digital.



The IOX DUAL USE system, pioneered by Comark, broadcasts analog today and digital tomorrow.

It's happened—DigitalTV is here. To make a painless transition, you need more than a new transmitter—you need a strong systems partner.

Count on Comark. As the dominant UHF transmitter supplier and founding member of the DTV research team, we're the only

company that can meet your requirements for the digital age. Whatever your needs, UHF or VHF, our systems are designed for ease of use, low cost maintenance and no-hassle installation.



Unparalleled quality and service.

Comark offers comprehensive installation, support and maintenance services—around the clock, and around the



The new Optimum line of VHF transmitters are the first VHF systems designed for all digital standards.

world. Based on an independent survey, Comark is consistently rated by broadcasters as having the best after sales support in the industry.



Shouldn't Comark be your digital partner?

Our vision is being shared. NBC, Paxson and several major groups have recently selected Comark to provide digital systems and engineering services to all of their owned-and-operated stations.

Want the answer? Get our free guide.

Call us today at (800) 688-3669 and see the innovative ways Comark can get you up to digital speed. Or you can request it via e-mail from erainey@comarkcom.com.



The AdvantageTV series of UHF transmitters was the first designed to meet the ATSC standard.



COMARK

500 Horizon Drive • Suite 503 • Chalfont, PA 18914
TEL: (215) 822-0777 • FAX: (215) 822-9129
www.comarkcom.com

COMARK
25th
anniversary
1972 to 1997



Emmy Award
Winner for
Engineering
Excellence

Stay tuned for our third in a series of DTV updates,
a new suite of DTV Transitional Services.

Circle (125) on Free Info Card

www.americanradiohistory.com

© 1997 Comark Communications, Inc.



ATTO Technology Inc. **M 8347**
Introducing: Express PCI-PS SCSI host adapter; AccelWare software for workgroup volume management.

Circle (321) on Free Info Card

Audi-Cord Corporation **2006**
Featuring: audio cart recorders/players.
Circle (322) on Free Info Card

Audio Accessories Inc.

Featuring: audio jack panels, jacks; pre-wired audio patch panels; patch cords, holders; Polysand; video panels; RS-422 patching; Edac connectors, accessories; nickel-plated patch cords.

Circle (323) on Free Info Card

Audio Action

Featuring: production music library on CDs.

Circle (324) on Free Info Card

Audio Developments Ltd.

Introducing: AD144 studio and OB mixer, 4O/P+2 auxiliaries, extensive monitor features and optional comm module, 12-24 channel frames; AD149 for film and drama use, 2 O/P + 2 aux, continuously variable gain, comprehensive EQ, channel inserts, limiters; AD160, AD261, Mercury, AD146, AD148 mixers.

Circle (325) on Free Info Card

5759

Audio Intervisual Design

S 3638, 8777

Sanken Audio Systems microphones CSS-5 shotgun stereo, COS-11 lavalier, CU-41 double condenser; JB Technologies dB 3000 digital optimizer, AD122 A/D converter, DA122 D/A converter; Brainstorm Electronics time-code products: SA-1 analyzer, SR-3 repair kit, SR-15+ distripalizer, SR-26 dual distributor-reshaper, SR-1/SR-2 universal refresher, TB-4 remote talkback.

Circle (326) on Free Info Card

Audiomation/Sellmark

Distributor of audio products.

Circle (327) on Free Info Card

audiopak Inc.

Featuring: audio recording media.

Circle (328) on Free Info Card

Audio Precision

3124

Introducing: SWR-2122 switchers; featuring: System One, System Two Dual Domain test systems; ATS-1 audio test system.

Circle (329) on Free Info Card

Audio Processing Technology

1727

Featuring: products for high-quality audio over ISDN and Switch-56 digital circuits; World-Net-compatible audio codecs studio links, remote feeds.

Circle (330) on Free Info Card

Audio-Technica U.S. Inc.

6311

Featuring: UniTools remote-powered in-line mic accessories; AT@-7174 UHF synthesized wireless system; ATW-1237 VHF wireless system with hand-held mic/transmitter; 1100 series VHF wireless systems; AT4041 transformerless studio capacitor mic; Quad Mic multi-element boundary mic; AT8446 pop filter.

Circle (331) on Free Info Card

Audio USA

3727

Featuring: diversity wireless microphone systems.

Circle (332) on Free Info Card

Auditronics Inc.

3018

Featuring: audio mixers for radio, TV, production; IFB/Mix-Minus system.

Circle (333) on Free Info Card

The Austin Company

S 6160

Featuring: consulting services for broadcast and communications clients with site and facility analysis, strategic master planning, requirements programming, space planning, architectural and engineering designs, technical systems design and integration, project management, construction services.

Circle (334) on Free Info Card

auto.des.sys

M 7963

Introducing: form.z v2.9, form.z RenderZone v2.9 graphics, animation equipment.

Circle (335) on Free Info Card

Autogram Corporation

3906

Introducing: Solution-20 rack frame system holding up to 10 cards; RC-1 relay card, DA-3 distribution amp card, SMA-10W amplifier, MPC-1 mic processor card.

Circle (336) on Free Info Card

Autologic Information Inc. (aii)

S 4076

Introducing: high-speed laser cinema recorder, images 4k files created digitally with unequaled quality on EK-5244 color intermediate stock.

Circle (337) on Free Info Card

Automated Weather Source

S 2051

Featuring: real-time local weather for broadcasters and the Internet; school weather network; AWS OnLine integrated local weather network with internet; AWS JavaWx first application to provide live real-time neighborhood weather to WEB; participation of radio/TV stations, schools, museums, science centers, hospitals, chamber of commerce newspapers and business in worldwide network.

Circle (338) on Free Info Card

AutoPatch, Div. of XN Tech.

M 8351

Circle (339) on Free Info Card



Get it done fast with Hannay cable reels.

- One or Two Person Transport • Custom XLR & BNC Connector Patterns
- Fast Manual Rewind • Lightweight & Stackable



Hannay Reels
The reel leader.

553 State Route 143, P.O. Box 159, Westerlo, NY, USA 12193-0159 • Phone 1-518-797-3791 • Fax 1-800-REELING • www.hannay.com

Circle (126) on Free Info Card

The Cost Of MPEG-2 AFF Encoding Is Taking A

So before you go off the deep end and pay for something you may not be getting, consider this: Argus... Vela's MPEG-2 encoding workstation ...answers the need for affordable clip encoding and storage for the broadcast professional. And at a cost that won't have you gasping for air. Look at the enhancements Argus supports:

Real-time encode, monitoring, multiplex and transfer to video file servers in one pass.

Simple and easy-to-use Graphical User Interface (GUI) built on Windows® NT 4.0.

Optional support for the MPEG-2 4:2:2 Studio Profile.

On screen VGA real-time confidence monitoring.

Rack mount or desktop solutions.

Louth automation interface support.

Expandable clip storage.

Random access to stored material for playback.

Support for multiple output channels.

GPI support.

Support for NTSC and PAL.

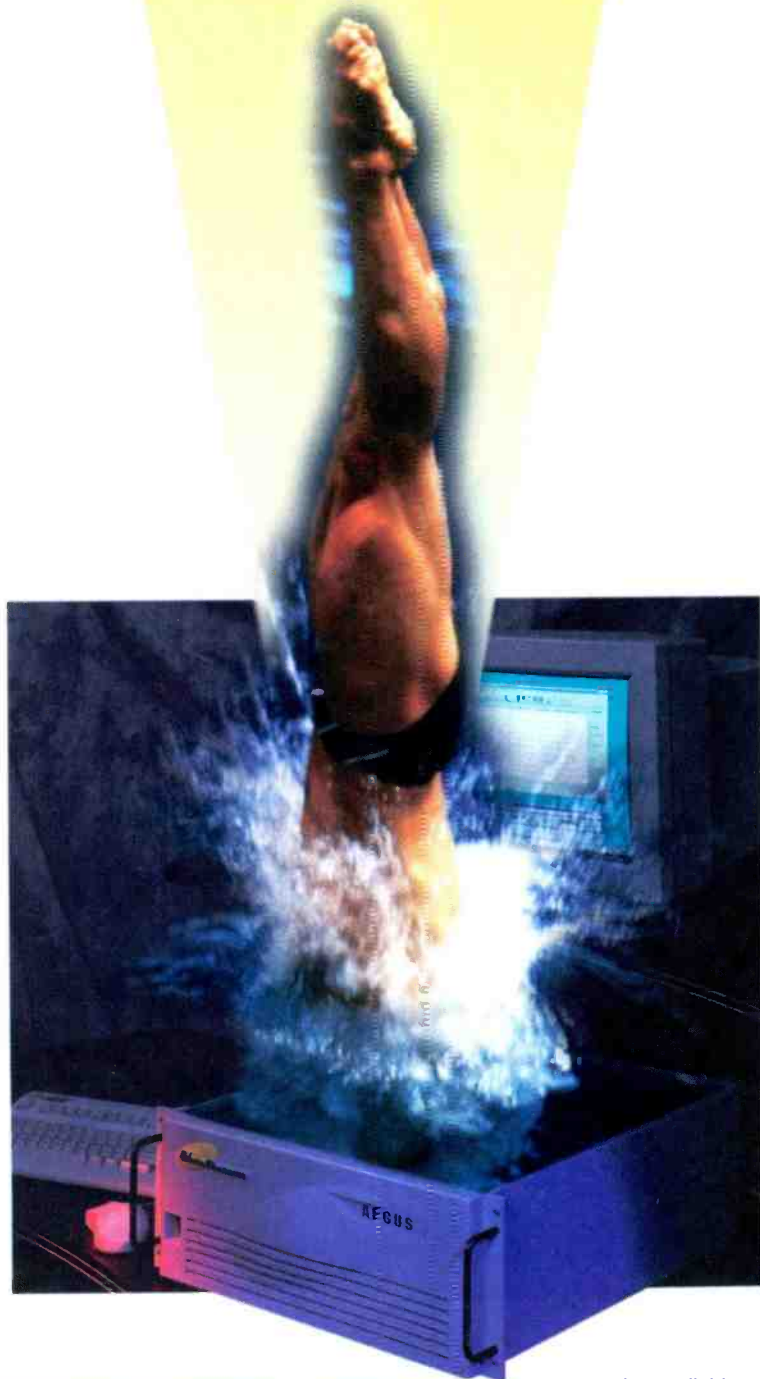
Dive.

To see world-class performance at NAB, watch Argus execute every day at Sands Expo Booth S5426.



8 1 3 • 5 7 2 • 1 2 3 0
<http://www.vela.com>
2501 118th Avenue North
St. Petersburg, Florida • 33716

Circle (127) on Free Info Card





AVCOM of Virginia Inc.

8880

Introducing: PRT-25D portable test receiver with new microprocessor-controlled functions; digital frequency lock for PSA-65A, PSA-65B portable spectrum analyzers; MSG series microwave, RF sweep/signal generators; BNG-

1000A broadband noise generator; NSA-1000A network, spectrum analyzer; RLB return loss bridges; satellite receivers, RF/microwave accessories, transmitters, receivers.

Circle (340) on Free Info Card

AVDiGITAL

S 1027

Circle (341) on Free Info Card

Avid Technology Inc.

9940

Featuring Media Spectrum open-platform on-line editing environment; Media Composer video editing system; Film Composer, FilmCutter editing systems; Matador, Advance, Beyond Reality software enhancements; NewsCutter news editor; AirPlay playback server; MediaServer; AvidNet/ATM; NewsView, NetStation automation systems; MediaRecorder, CamCutter, Avid News management system.

Circle (342) on Free Info Card

Avitech International Corporation S 4272

Introducing: mvp2 Live Video Command Center multiple live video windowing system, integral video routing matrix; to 16 real-time video signals displayed simultaneously on VGA monitor or projector; multiple standards, resolution of 1,024x768; Pentium CPU with Windows NT O/S.

Circle (343) on Free Info Card

Avitel Electronics Corporation

11570

Introducing: DSY3372 digital frame synchronizer; DSA 3345 digital video-to-analog composite; 330 serial digital terminal equipment; under monitor display and tally systems; digital audio monitors; RMA mounting shelves for VTRs.

Circle (344) on Free Info Card

AVP Mfg & Supply Inc.

S 3020

Featuring: RPT punch panels, wired jackfields; AES audio jackfields; video, serial digital jackfields.

Circle (345) on Free Info Card

AVS Graphics

8822

Featuring: Manuscript Elite and Manuscript Junior character generators, single, dual-channel, analog and digital; Portfolio still-store in analog and digital models; video converters, digital-to-analog, component to RGB and composite, etc.

Circle (346) on Free Info Card

Axon Digital Design BV

S 1049

Introducing: digital audio monitors, audio A/D and D/A converters, encoders, decoders, fiber-optic products.

Circle (347) on Free Info Card

Azden Corporation

S 1260

Introducing: Performance Series UHF 63-channel wireless system; PRO series WX/T-Pro XLR plug-in transmitter.

Circle (348) on Free Info Card



BAF Communications Corp. LA 406, 11904

Introducing: upgraded SNV-19 satellite news vehicle with Intelsat/Eutelsat type-approved antenna; Tiernan video compression system; MCL low-profile TWTAs; Featuring: Commander SNV vehicle, ENG van with Crow's Nest camera system.

Circle (349) on Free Info Card

BAI Aerosystems

S 4269

Circle (350) on Free Info Card

Baird Satellite Supporting Systems

S 3067

Circle (351) on Free Info Card

Balboa Capital

S 1035

Featuring: financial services.

Circle (352) on Free Info Card

Balcar SA

9167

Introducing: Fluxlite PFC, Quadlite PFC, Bi-voltage Duolite, Twinlite sets.

Circle (353) on Free Info Card

Band Pro Film/Video

10072

Introducing: TB-9 Smart Monitor 9-inch green screen CRT, viewable in direct sun with auto recognition of NTSC, PAL, SECAM; FMG-6 motor for precise remote focus, iris, zoom control; K-Tek telescoping boom poles; Digital Cinematography camera rig with Sony DVW-700, Canon 9x5.2 cine-style lens, Chrosziel matte box, follow-focus; DuoPod Pro 3-section camera support with 100mm ball interface; Chrosziel camera mounting plates; miniature zoom lens for XC-999 cameras.

Circle (354) on Free Info Card

"The Word is Out!"

16 EXCHANGER

572

GET A SPECIAL RETURN PLUS A PARADE OPTION.

WORLD WARRIOR

IDX Technology

presents

The New Lithium Ion Battery.
A more powerful and lighter NP battery.

Lithium Ion NP-L40

- 50% More Power
- 40% Lighter Weight
- No Memory Effect
- 14.4 Volts
- 40 Watts
- 2.8 Amps

I-D

IDX Technology

Call for more information


USA

5466 Complex Street, Suite 202, San Diego, CA 92123, U.S.A.

Tel: (619) 560-9779 FAX: (619) 560-5075

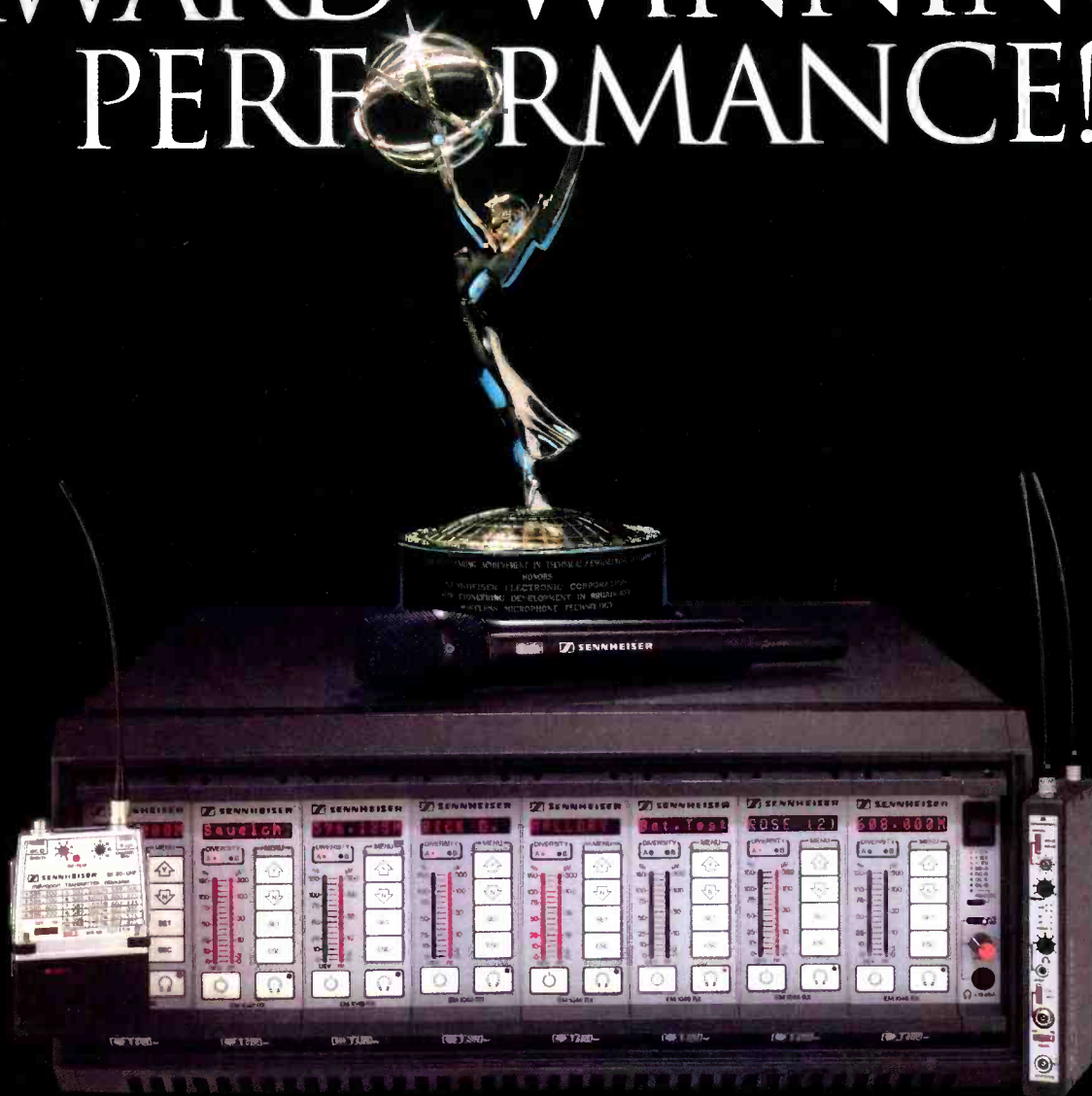
Web Page: www.idxtek.com

E-Mail: idxusa@idxtek.com

Circle (128) on Free Info Card

NAB '97
Booth #8430

AWARD WINNING PERFORMANCE!



1996 Emmy Award For Outstanding Achievement in the Sciences of Television Technology
presented to Sennheiser for RF Wireless Microphone Systems

German craftsmanship, advanced engineering, and precision manufacturing combine to produce Sennheiser RF Wireless Microphone Systems. Hailed worldwide as "the ultimate", Sennheiser is the absolute best investment you can make in wireless technology.

Sennheiser Wireless Systems deliver the most natural and transparent sound ever transmitted. Our HiDyn *plus*™ noise reduction system yields tremendous signal-to-noise ratios. Phase-locked loop (PLL) frequency synthesis provides frequency agility and stability, so you can

easily adjust your equipment to local RF conditions. Plus, advanced transmitter battery management systems even allow remote status indication. Only Sennheiser offers real-time computer monitoring and remote control of all receiver functions. Only Sennheiser provides service facilities worldwide. Only Sennheiser brings all of this together in a single state-of-the-art package.

For award-winning performance every time, there's only one name you can count on... Sennheiser.

THE EVOLUTION OF AUDIO
SENNHEISER®

SENNHEISER ELECTRONIC CORPORATION

6 VISTA DRIVE, P.O. BOX 987, DEPT. 4015, OLD LYME, CT 06371 • TEL: 860-434-9190 EXT: 4015 FAX: 860-434-1759 • CALIFORNIA: TEL: 818-845-7366 FAX: 818-845-7140
MEXICO: TEL: (525) 639 09 56 FAX: (525) 639 94 82 • CANADA: TEL: 514-426-3013 FAX: 514-426-3953

World Wide Web: <http://www.sennheiserusa.com>

Manufacturing Plant: Am Labor 1, 30900 Wedemark, Germany

See us at NAB, Booth #6760

Circle (129) on Free Info Card

www.americanradiohistory.com

**BARCO**

Featuring: Luxor optical video link; DVM 1637, Vivaldi, CVM 3000 monitor series; Nova MPEG-2 encoder; Pulsar-TV modulator; ROSA head-end management system.

Circle (355) on Free Info Card

M 7819, 11919

Baron Services

Featuring: international weather network with full Internet access to remote weather sensors and cameras for real-time weather conditions (www.realtimeweather.com); VHDD250 Very High Definition Doppler Radar with 250kW operating power enables observation of wind shear, areas of circulation on small scale, severe thunderstorm outflows, tornadic formations.

Circle (356) on Free Info Card

S 3629

BASF Magnetics Corporation

Featuring: BASF products for Betacam SP, Digital Betacam, 1-inch type "C" and Pro VHS and S-VHS cassettes.

Circle (357) on Free Info Card

S 1556

BDL-Autoscript Inc.

Introducing: +Winplus+ Windows prompting for newsrooms, +Winplus+ VGA for O/B vehi-

S 3032

cles; TFT6 6-inch, TFT10 10-inch flat screen on-camera prompters.

Circle (358) on Free Info Card

Beck Associates

Featuring: serial digital monitoring distribution amplifier.

Circle (359) on Free Info Card

6954

Belar Electronics Lab Inc.

Featuring: digital TV stereo monitor; SAP, PRO monitors; TV aural monitor for CATV operators; monitoring products for FM group owners; RBDS, subcarrier monitors for Wizard system; AM wizard for controlled carrier.

Circle (360) on Free Info Card

3312

Belden Wire and Cable Company

Introducing: AES/EBU digital patch cable; mid-size Star Quad mic cable; IEEE 1394 serial bus cable; plenum S-VHS cable; 24AWG audio cable; Videoflex bundled RG-59 cables; Media Twist premise cable; AudioFlex snake cable.

Circle (361) on Free Info Card

9880

Bencher Inc.

Featuring: graphics camera support copy stands.

Circle (362) on Free Info Card

11176

Benchmark Media Systems

Introducing: VCA-02 stand-alone remote-gain control; DAC-2004 quad 20-bit D-A converter.

Circle (363) on Free Info Card

8664

Best Power/North Star Technical Services

Featuring rack-mount Fortress and UNITY/I 3-phase system.

Circle (364) on Free Info Card

S 4367

Bext Inc.

Introducing: SS1000 E 1kW solid-state UHF/VHF amplifier, compact design.

Circle (365) on Free Info Card

3603

Beyer Dynamic Inc.

Introducing: MCD 100 digital microphone; MCE 82 stereo condenser mic for XY stereo configuration; MCE 84 condenser with equalized frequency response; MCE 7 extremely small omnidirectional electret condenser mic.

Circle (366) on Free Info Card

5505

B&H Photo-Video-Pro Audio

Distributor, dealer for digital camcorders, Panasonic AJD650, AJD700, Sony DSR-130, DSR-200; digital VCRs JVC BRD-80/D85, Sony DSR-30; Data Translation Media 100LX, CFE Gallea broadcast video card; Broadway MPEG-1 hardware encoder; software - Scitex Spherical, AutoMedia Atomaster.

Circle (367) on Free Info Card

S 1508

Bird Electronic Corporation

Featuring: average reading power meter; 5kW, 10kW air-cooled load resistors.

Circle (368) on Free Info Card

1327

Bi-Tronics

Introducing: plenum S-VHS, locking S-VHS cables, Mogami RGB cables, low-cost BNC cables; industrial video, broadcast cables, plenum RGB cables; Covid video DAs; RDL audio DAs and combiners; ETA power distribution products; S-VHS feed-through panel-mount connector.

Circle (369) on Free Info Card

S 4973

Low Cost Standout.

When the story must get on the air!

BMS offers highly reliable and rugged ENG Truck Systems. High reliability doesn't mean high cost. Complete systems start under \$10,000.

- Available for 2, 2.5, 2/2.5 and 7 GHz or dual band 2/2.5 and 7 GHz
- New vehicle or update
- 1 RU control panel
- Two year limited warranty

Call BMS or your ENG Truck Systems integrator today!

BMS Broadcast Microwave Services, Inc.

5636 Ruffin Road, San Diego, CA 92123-6388
(800) 669-9667 • (619) 560-8601 • Fax (619) 560-1637

Circle (130) on Free Info Card

See us at NAB Booth #7202



EEV IOTs

FIELD PROVEN

DIGITAL TECHNOLOGY

EEV already offers the most comprehensive range of digital IOTs.

These have been developed as a result of work performed on experimental HDTV transmitter sites.

It's easy going with EEV. Whether your future transmitter is analog or digital, EEV has the right product for the job since the EEV IOT is already established as the most cost effective solution for analog UHF TV applications.

Talk to EEV *now*...the company with unrivalled experience and proven track record...and your digital dilemma will be resolved!

See us at NAB Booth #9558



USA: EEV Inc., 4 Westchester Plaza, Elmsford NY 10523
Tel: (914) 592 6050 or 'Toll Free' 1-800-DIAL-EEV Fax: (914) 682 8922

CANADA: EEV Canada Ltd., 6305 Northam Drive, Unit 3, Mississauga,
Ontario L4V 1H7
Tel: (905) 678 9811 Fax: (905) 678 7726

UK: EEV Ltd., Waterhouse Lane, Chelmsford, Essex CM1 2QU, England
Tel: (01245) 493493 Fax: (01245) 492492

SUBSIDIARY OF THE GENERAL ELECTRIC COMPANY PLC OF ENGLAND **GEC**

Circle (131) on Free Info Card

AT THE HEART OF YOUR DIGITAL UHF TV TRANSMITTER

www.americanradiohistory.com



Bittree Inc. S 3775
Audio, video, data patching systems, accessories; 3-pin rear interface connector for audio.
Circle (370) on Free Info Card

BLR Communications LB 107, S 3065
Circle (371) on Free Info Card

Boeckeler Instruments Inc. M 7946
Featuring: Pointmaker video marker with keyboard, multisync system for draw, arrows and electronic "chalkboard" features during broadcasts.
Circle (372) on Free Info Card

Bogen-Cine 11558
Introducing: Aurasoft natural softlight in portable 600, 800 millimeter units; can be lamped with HMI 1.2k, 2.4k, 4k or Tungsten 1-3k or 2-4k lamps, switchable intensity.
Circle (373) on Free Info Card

Boland Communications S 1047
Circle (374) on Free Info Card

Boris Effects M 7669
Circle (375) on Free Info Card

BOSS Associates Ltd. S 1039
Circle (376) on Free Info Card

Bradley Broadcast Sales Inc. 1506
Distributors: Panascheme studio furniture, racks; Audioarts mixer; Telos, Gentner phone talk systems; Tascam portable DAT.
Circle (377) on Free Info Card

British Information Services S 4858
Featuring: international news feeds available via real audio on the internet, <http://britain.nyc.ny.us>.
Circle (378) on Free Info Card

BROADCAST[®] engineering

Broadcast Engineering Magazine 5444, S 1760
Circle (379) on Free Info Card

Broadcasters General Store 2019, 8865
Distributor for DNF Industries; IQS; Sine Systems; American Recorder Technology.
Circle (380) on Free Info Card

Broadcast Exchange Inc. M 7942
Featuring: free listing in on-line database of broadcast equipment at www.broadcastexchange.com/; web site features Production Equipment Rental Association directory with up-to-date listings of reported missing broadcast equipment.
Circle (381) on Free Info Card

Broadcast Microwave Services 7202
Introducing: STL/TSL ICR modular system for high-quality, low-cost worldwide standards; ENG vehicle packages for single- or dual-band transmitter with offset feed antennas, test generators integrated in control panel; news helicopter systems with omni antennas, GPS steerable antenna pods; center receive site controller.
Circle (382) on Free Info Card

Broadcast Store 8666
Broadcast equipment sales, brokerage.
Circle (383) on Free Info Card

Broadcast Video Systems 8766
Introducing: VITS-2 video analyzer samples, digitizes any line of video field to waveform display on a PC monitor; Masterkey 6 serial digital linear keyer for frame-accurate mix to key, fade to black, key area masking; CC-100 closed-captioning decoder for standard monitors, includes two language capability.
Circle (384) on Free Info Card

BSS Audio 6948
Full line of signal processing equipment.
Circle (385) on Free Info Card

Burk Technology 3524
Introducing: EAS encoder/decoder; LX-4 EAS program interrupt; RX-4 EAS monitor receiver system.
Circle (386) on Free Info Card

BURLE INDUSTRIES INC. 7007
Featuring: camera tubes, microwave video link, UHF and VHF power tubes.
Circle (387) on Free Info Card

Burst Electronics Inc. 8765
Featuring: PC-2 CG board for PC; blackburst, color bar, time-code generators; video cross-point switcher; micro CG; video mixer/fader; video detector; video DAs; audio switchers; logo generators.
Circle (388) on Free Info Card



Cablecam Systems LB 112
Circle (389) on Free Info Card

Cablewave Systems 11954
Featuring: broadcast and microwave antennas; Flexwell low-loss foam coaxial cable, connectors and accessories; elliptical waveguide, connectors, accessories.
Circle (390) on Free Info Card

C.A.E./Carmen Abato Enterprises Inc. 6532
Circle (391) on Free Info Card

Calculated Industries Inc. 7009
Featuring: special purpose, time-code calculator.
Circle (392) on Free Info Card

California Amplifier Inc. S 2351
Featuring: RF amplifier products.
Circle (393) on Free Info Card

Calrec Audio Ltd. S 3976
Audio mixing consoles, including digital control for production and dubbing; rack-mounted signal processors.
Circle (394) on Free Info Card

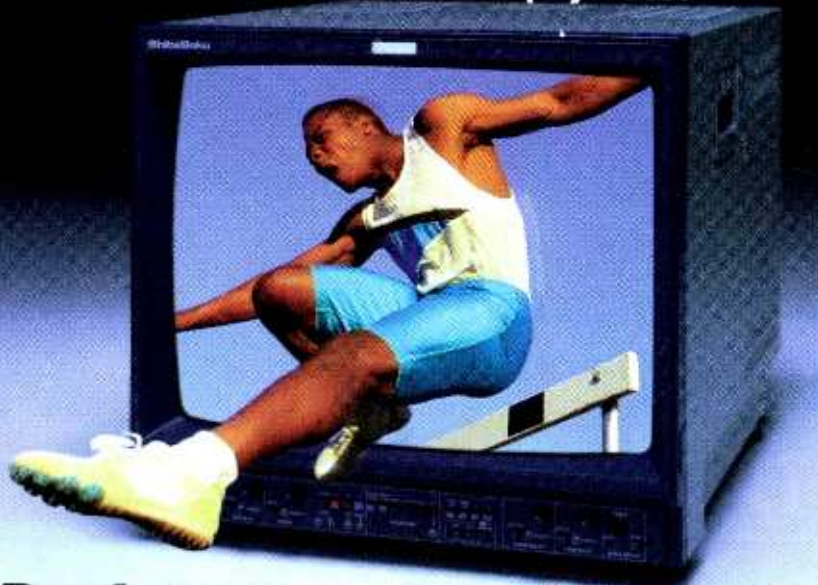
Calumet Coach Company LA 202
Special use mobile units, both self-propelled and trailer units.
Circle (395) on Free Info Card

Calzone/Anvil Cases 6943
Featuring: Anvil ATA, ArmorLite, Speedster, LifeCases; Calzone Escort series, LDATA series, Titan series equipment cases.
Circle (396) on Free Info Card

Cambridge Animation Systems Ltd. S 1338
Circle (397) on Free Info Card

Camera Support International 11344
Circle (398) on Free Info Card

HDTV. Flat Screen Plasma Displays. DVD.



Performance Breakthrough

The video world is changing fast. And Asaca/ShibaSoku once more leads the way. We provide monitors, test instruments and archiving libraries that manufacturers, TV stations and post production facilities worldwide depend on.

Tune in to the future of video and data storage systems by visiting Asaca/ShibaSoku at NAB. Check out our reference-quality HDTV monitors, stunning flat plasma displays, DTV test signal generators, DVD archives and much more.

Video/Audio Standards • HDTV • Flat Screen Plasma Displays • Tape & DVD Archiving

ASACA
ASACA/SHIBASOKU CORPORATION OF AMERICA
THE TRUE MEASURE OF PERFORMANCE

ShibaSoku
TEL: (310) 672-6765 FAX: (310) 672-3665
426 W. FLORENCE AVE., INGLEWOOD, CA 90301

See us at NAB in LVCC Booth #11914

Circle (132) on Free Info Card

International Television Symposium

Montreux 1997

20th International
Television Symposium
and Technical Exhibition
Montreux Switzerland



Symposium 12-17 June 1997

Exhibition 13-17 June 1997

Circle (113) on Free Info Card

THE EVENT THAT MEANS BUSINESS



Following its unqualified success in 1995 plans are now well underway

to ensure that the 20th Anniversary Edition of the Montreux International Television Symposium and Technical Exhibition, taking place from **June 12-17, 1997**, will not only be special but exceed all expectations.

20th ANNIVERSARY EDITION

THE INTERNATIONAL ELECTRONIC CINEMA FESTIVAL

10TH ANNIVERSARY



THE 10TH EDITION

WILL BE CELEBRATED CONCURRENTLY WITH THE "GOLDEN ROSE OF MONTREUX" IN MONTREUX, SWITZERLAND

DATES: 24 - 29 APRIL, 1997

For further details: Montreux International Television Symposium
Rue du Théâtre 5, 1820 Montreux/Switzerland • Tel.: +41 21 963 32 20 - Fax: +41 21 963 88 51
E-mail: r.crawford@tvsympo.mcnet.ch
www.americanradiohistory.com



C

Cammate Systems 11285
Featuring: Travel Series and System III cranes with vertical control rod for improved leveling and increased stability; Travel series boom lengths to 48 inches; System III booms to 30 feet when fully extended; both products include remote head control systems.

Circle (399) on Free Info Card

CAMPLEX Concept W Corporation 10984
Introducing CP-301B Complex multiplexing system; PDC-340 power down coax unit; PP-A2X 2nd channel audio system; VTU-320A automatic video timing unit.

Circle (400) on Free Info Card

Camrobotic Systems M 6470
Featuring: ultraquiet mini pan/tilt unit for small cameras for conventional control systems or RS-422; weather-proof tower camera with all-weather pan/tilt, color camera and zoom lens with RS-422 control for local weather coverage.

Circle (401) on Free Info Card

CANARE 11944
Introducing: serial digital dual video jacks, video cable; 75Ω RCA crimp plugs; cable strippers; 110Ω digital audio cable; 75Ω F connectors.

Circle (402) on Free Info Card

Canon USA Inc. 10548
Featuring: broadcast lenses with vari-angle prism optical stabilization system; standard, internal focus lenses; prosumer camera; laser transmission systems.

Circle (403) on Free Info Card

Capital Networks Ltd. M 8321
Multimedia software and hardware products for broadcast and cable TV non-linear editing, page creation and display with advanced scheduling capability.

Circle (404) on Free Info Card

Capitol Marketing Concepts S 2459
Circle (405) on Free Info Card

Caption Colorado 4856
Featuring: captioning services.

Circle (406) on Free Info Card



The Caption Resource Centre 11271
Circle (407) on Free Info Card

Carpel Video 11237
Featuring: evaluated blank Betacam SP cassettes; blank cassettes of all formats.

Circle (408) on Free Info Card

Cartesia Software M 8263
Circle (409) on Free Info Card

Cartoni USA dba Ste-Man Inc. 8279
Introducing: Gamma fluid head featuring infinitely variable fluid drag and counter balance for cameras to 33 pounds; Superpod heavy-duty tripod with flat or 150mm ball base; Delta, Action Pro, Alfa, Alfa II, Beta, C20S, C40 fluid heads; C20S, C40 Dutch head for dutch-tilt effects with ENG/EFP cameras; rubber ground spreader.

Circle (410) on Free Info Card

Cavena Image Products AB S 4667
Circle (411) on Free Info Card

CBSI/Custom Business Systems 3012
Introducing: new and enhanced traffic and billing systems, Premier, Classic, Elite with DeltaFlex Traffic Engine; InterAcct accounting software with general ledger, accounts payable and report generator.

Circle (412) on Free Info Card

CBS News Archives M 7533
Featuring: video libraries.

Circle (413) on Free Info Card

C-COR Electronics Inc. 4649
Introducing: System 4000 9- and 10-bit encoder and decoder; 31.Gb/s transmitter and receiver; NICAM 728 digital audio codec; DS3 45Mb/s transport system; AM fiber rack; FlexNode; RF FlexNote trunk, bridge, line extender amplifiers for CATV; I-Flex.

Circle (414) on Free Info Card

C-Cube Microsystems S 5838
MPEG-2 encoding and decoding solutions.

Circle (415) on Free Info Card

CEA Digital Newsroom Systems 9661
Featuring: CEA Digital NewsRoom System with miro DC-30 digital audio/video controller, electronic prompting in Arabic and Chinese, on-line script archive and media library, multilingual editing.

Circle (416) on Free Info Card

Central Tower Inc. 1717
Featuring: towers, monopoles; structural engineering analysis; complete construction services, antenna, line installation; turnkey projects.

Circle (417) on Free Info Card

Century Precision Optics 8230
Introducing: .65x Century wide-angle converter for digital palmcoders; .8x lightweight wide-angle converter mounts to full-size industrial cameras; .6x wide angle fixed adapter for maximum wide angle coverage with minimal distortion; 1.6x teleconverter attaches to video zoom to extend telephoto end of focal length; Super Fisheye adapters, for internal focus video zooms or for 3-chip industrial zoom with 75mm diameter lens front; .6x double Asphere wide angle adapter; achromatic diopters; Video Duplikins.

Circle (418) on Free Info Card

Channel Master S 2872
VSAT compression-molded reflectors, mounts, and feeds designed for transmit/receive applications including data, audio and video.

Circle (419) on Free Info Card

Channelmatic Inc. 9164
See Enterprise Systems Group.

Circle (420) on Free Info Card

Chapman/Leonard Studio Equipment 5754
Introducing: LenCin triangular-based pedestal, Pedolly 4-point-based pedestal; CS Base with Lenny Mini; Sport ATB II for football sideline coverage.

Circle (421) on Free Info Card

Cheetah Systems Inc. I 4045
Featuring: closed-captioning solutions.

Circle (422) on Free Info Card

C. H. Ellis Co Inc. I 5556
Featuring: broadcast ENG soft carrying cases for monitors, cameras, lighting equipment, etc.

Circle (423) on Free Info Card

OUR MAST GETS IT UP FAST

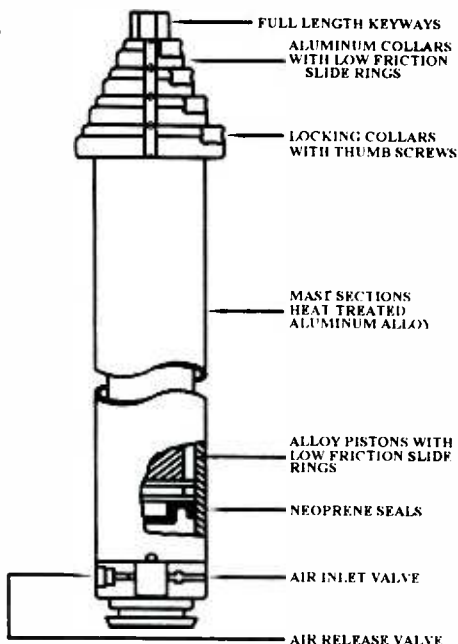
TELESCOPIC PNEUMATIC MASTS

HILOMAST

Applications

- Remote ENG
- Communications
- Field Strength Measurements
- Pop-up Jamming
- Remote Surveillance
- Noise Level Measurements
- Temporary Floodlighting
- Environmental Sensors
- Military Communications

COMPETITIVE PRICING



for Further Information Contact Jim Osborne

ALLEN OSBORNE ASSOCIATES, INC.

756 LAKEFIELD RD. Bldg. J

WESTLAKE VILLAGE, CALIFORNIA 91361

Tel: (805) 495-8420 Fax: (805) 373-6067

aoo@netcom.com



Circle (114) on Free Info Card

See us at NAB Booth #S2258

The Agile Omni Global VU option gives you one touch access to all satellite formats.

More channels, more signals, more frequencies — life in the down link is becoming more complex every day.

What you need is something to simplify your life.

What you need is the Global VU Model CAM830 Control Access Monitor from Standard Communications.

Direct or remote control.

Used in conjunction with the Agile Omni receiver, the Global VU gives you simplified access to all satellite formats from easy front-panel controls or from a PC comfortably situated on your desk, miles away.

Directly or using the straightforward Windows®-based software, the CAM830 lets you add or modify formats, then scan them by RF frequency and/or audio subcarrier. It gives you complete control over all three audio

subcarrier demodulators, as well as international video features such as PAL, SECAM and NTSC. It gives you control of video and audio output levels with individual channel memory.

And we're just getting started.

Spectrum analysis.

Want to really see what's going on? The Global VU gives you a screen-filling display of the RF spectrum for each satellite on your remote PC. It also gives you a real-time look at the C/N ratio without any time-consuming precalibration.

And there's more. As a field retrofit or optional add-on, the CAM830 gives your Agile Omni more easy-to-use control than you may have ever thought possible. To get the full story fast, including complete specifications, fax Standard today at 800/722-2329

(California and International numbers, 310/532-0397) and we'll fax it right back to you.

Be a know-it-all. Get your hands on a Global VU.

The Right Technology for Right Now.



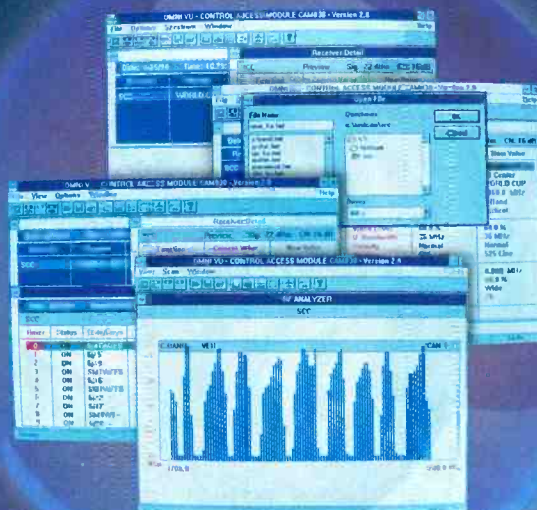
Standard Communications

**SATELLITE & BROADBAND
PRODUCTS DIVISION**

P.O. Box 92151
Los Angeles, CA 90009-2151
310/532-5300 ext. 280
Toll Free 800/745-2445
Fax: 800/722-2329 (Toll Free)
310/532-0397 (CA & Int'l Only)
Circle (115) on Free Info Card

Knows all. Tells all.

See us at NAB Booth #10180





Chief Manufacturing Inc. S 3776
Circle (424) on Free Info Card

Chimera 5461
Introducing: 24"x24" background projection system; Micro LightBank for Frezzi Mini-Arc.
Circle (425) on Free Info Card

Christie Electric Corporation 6511
Featuring: batteries, chargers, analyzers.
Circle (426) on Free Info Card

Chyron Corporation 11501, S 3632
Introducing: WiFiNiT! NT graphical user interface for iFiNiTQ, MAX! and MAX-INE! systems; keyPC keyboard with embedded Pentium CPU, Scribe NT character generator with Windows 96/NT to control pcCODI or Truevision graphics cards; Liberty 32 paint, animation with version 6.0 software for SGI O2 workstations; Pro-Bel routers, master control switches, video server controls, intercoms; RT-SET virtual set technology.
Circle (427) on Free Info Card

Cine 60 Inc. 8858
Featuring: NiCad battery belts, packs, chargers; portable battery-operated Sun-Gun; on-camera battery-operated 20W, 35W, 50W Spider-Lites; Cine 60 Snaplok tripod quick release.
Circle (428) on Free Info Card

Cinebase Software M 7825
Introducing: Digital Media Management System DMMS for tracking large volumes of digital imagery including video, audio and graphics to terabytes of data; facilities, studio management support products; management software; engineering facilities management.
Circle (429) on Free Info Card

Cinekinetic 11277
Featuring: portable grip, camera support gear; McJib jib arm, Underslinger, Microjib Pro SX, Sawed Board, Pocket Dolly, Saddlecam, Jib Stix, One Man Grip Kit, Rolling Wonder.
Circle (430) on Free Info Card



Cinema Products Corporation 10837
Featuring: camera support products, Steadicam, professional video camera control systems.
Circle (431) on Free Info Card

Cinemills Corporation 6335
Featuring: lighting products and systems; studio furnishings.
Circle (432) on Free Info Card

Cintel 6543
Featuring: film equipment and services; telecines.
Circle (433) on Free Info Card

CIPRICO INC. S 1222
Introducing: enhancements to UltraSCSI RAID-3 disk array; Fibre Channel 7000 demonstrations including broadcast demo, film resolution demo and network attach storage.
Circle (434) on Free Info Card

Circuit Research Labs 2106
Introducing: software for DP-1000 all-digital FM stereo audio processor for improved stereo enhancement, DRX dynamic range extension, processing dayparting, remote control; featuring FM Amigo, Signature series, Digital SC-100 for FM radio; TVS and BAP series products for TV sound; MBL, AM-4m/s and AM Amigo for AM radio.
Circle (435) on Free Info Card

Clark Wire & Cable 7871, 1721
Featuring: coax for serial digital signals; AES/EBU digital audio cable/snakes; Clark Ergonomic Crimp tools; Hannay reels; Service Mult cables, remote composite cables.
Circle (436) on Free Info Card

Clear-Com Intercom Systems 11565
Featuring: auto-nulling telephone interface for party-line and Matrix intercoms; Windows 95 software for Matrix Plus II intercom; 2-way radio intercom interface; production, multi-channel party-line, digitally-controlled matrix, wireless intercom, IFB systems, headsets, belt-packs, camera interfaces.
Circle (437) on Free Info Card

ClearSat LA 504
Circle (438) on Free Info Card

C-MAC Microcircuits Ltd. M 6328
Circle (439) on Free Info Card

CMC Technology 6211
Featuring: replacement video head assemblies.
Circle (440) on Free Info Card

Coaxial Dynamics 3909
Featuring: test and measurement equipment for RF power, custom OEM RF filters and directional power detectors, oil/air-cooled loads.
Circle (441) on Free Info Card

Coffey Sound 1428
Distributor for products for professional audio and broadcast.
Circle (442) on Free Info Card

Coherent Communications Inc. 5142
Introducing: CVT-500 miniature video transmitter; CVR-1500 diversity video/audio receiver; CVT-1500 video/audio transmitter with SMPTE VITC and LTC time-code generators on board.
Circle (443) on Free Info Card

Colortran 7873
Featuring: lighting products, control systems.
Circle (444) on Free Info Card

Columbia Communications Corp. S 2379
Circle (445) on Free Info Card

Columbine JDS Systems Inc. 10454
Featuring: master control automation with multistation, multiregional capability; video server automation; program scheduler; asset management; traffic, sales analysis, accounting, finance software; Oasis cable advertising sales management.
Circle (446) on Free Info Card

Comark Communications Inc. 7414
Introducing: IOX transmitter line, smaller compact footprint incorporates all unique features of standard IOX including microprocessor intelligent controller; Digital Advantage TV family of transmitters; solid-state UHF/VHF digital and analog transmitters, 500W to 60kW.
Circle (447) on Free Info Card

Get the picture?

Why not use 'Spectrum' camera cable technology – throughout the studio – and be sure?

You know the downside...if your primary camera cable doesn't come through, now with digital fidelity, you don't get the picture. That's why Mohawk/CDT camera cable technology has been virtually unchallenged for 45 years.

But what happens in the studio and control rooms? Shouldn't your equipment and interconnects maintain that fidelity? Hitachi, Ikegami, Panasonic and Sony think so. That's why they specify Mohawk/CDT for their own equipment.

And now we've got the full line of digital signal processing cables and assemblies – video, audio, coax, triax, even the only UL-recognized Fiber Optic cable for HDTV – so you can maintain that camera cable performance throughout the studio.

Why not assure top fidelity all the way...with Mohawk/CDT? Just call our Broadcast Cable Division, at 1-800-422-9961, and get the picture.

MOHAWK/CDT
CABLE DESIGN TECHNOLOGIES



9 Mohawk Drive, Leominster, MA 01453 1-800-422-9961 / FAX 508-537-4358
Email: info@mohawk-cdt.com

Circle (116) on Free Info Card

Commercial News S 4379

Circle (448) on Free Info Card

Communications Data Services 1617

Featuring: international, North American terrain data.

Circle (449) on Free Info Card

Communications Equipment Sales Inc. S 4074

Circle (450) on Free Info Card

Communications & Power Industries (CPI) 5604

Eimac division features ground-based satellite communication klystrons including extended frequency ranges and "Fast-Tune" versions; new range of external cavity UHF TV klystrons, 15kW to 60kW; 28GHz LMDS wireless cable amplifiers. Satcom division features solid-state power amplifiers; compact 300-400W medium power amps; compact single drawer 600-700W power amps; V-Star II 200W hub-mount amps.

Circle (451) on Free Info Card

Communications Specialties Inc. M 7455

Featuring: Scan Do Ultra combination workstation-to-video scan converter and down converter.

Circle (452) on Free Info Card

Compix Media Inc. M 8333

Introduction: VideoCG Pro, an affordable PC-based character generator, titler as a video adapter board, producing composite and S-Video (PAL optional) I/O signals; external key available; an affordable alternative for budget-minded professionals.

Circle (453) on Free Info Card

Comprehensive Video Group 11650

Featuring: video amplifiers, cables, desktop video production accessories; Edit Master; Walter Brewer lighting systems integration services.

Circle (454) on Free Info Card

Comprompter 8670

Featuring: ScoreMaster automates gathering and airing of sports scores; VoteMaster versatile election software; NetMaster produces HTML text from news scripts; school closings automates cancellation announcements; VideoMaster digital video control interface.

Circle (455) on Free Info Card

Computer Expressions 6061

Introducing: Billboard CD holder for 18 CDs, customized with 4-color process art, folds flat for shipping or trade show give-away, in sizes for rewritable media in quantities as low as 500 units.

Circle (456) on Free Info Card

Computer Modules Inc. M 8166

Circle (457) on Free Info Card

Comrex Corporation 2121

Introducing: Hotline Pots codec; featuring: Nexus ISDN codecs for remote broadcasts; wireless IFB equipment; Buddy remote mixer; frequency extenders; telephone couplers.

Circle (458) on Free Info Card

COMSAT Corporation 11922

Satellite communications products, services.

Circle (459) on Free Info Card

Comtech Antenna Systems Inc. 8753

Introducing: 5m inclined orbit satellite antenna; 1.8m fly-away antenna system.

Circle (460) on Free Info Card

Comtek Inc. 11266

Introducing: IFB-25 controller for BST-25 wireless IFB system; MT-25 miniature VHF synthesized base station transmitter for field, studio with PR-72 personal monitor receiver; QBC 9-10 microprocessor-controlled 1-hour charger for 10 personal receivers using Mi-MH batteries.

Circle (461) on Free Info Card

COMWAVE 8683

Introducing: broadband booster; SB050D; digital transmitter line.

Circle (462) on Free Info Card

Conifer Corporation 6212

Introducing: Microcepter series, integrated receivers for wireless cable MMDS.

Circle (463) on Free Info Card

Connectronics Corporation 6512

Featuring: parabolic reflectors, accessories, shoulder straps, transport cases, sport handles, wind muff.

Circle (464) on Free Info Card

Continental Electronics Corporation 2606

Featuring: complete line of AM and FM radio transmitters and associated RF products and equipment from international companies Telefunken Sendertechnik and Continental Lensa; CEC Broadcast Supply Division will exhibit products for studios, monitoring, remote control, FM antennas and other related radio station requirements; radio, DAB, TV and broadcast studio equipment.

Circle (465) on Free Info Card

**Control Concepts/Leibert 9658**

Featuring: Isolatron Plus, IsolaGuard power protection systems.

Circle (466) on Free Info Card



Introducing the Top Performing IOT in Broadcasting

The Eimac Klystrode® IOT – One Tough Act to Follow

Eimac's family of Klystrode IOTs offer the power and performance you need for Advanced TV broadcast requirements, from today's analog to tomorrow's Digital TV.

- **Dependability:** Behind the scenes, the Klystrode IOT operates effortlessly to your specifications with exceptional reliability
- **Longevity:** Many Eimac IOTs in use now have more than 40,000 hours of tube life
- **Tuning and Maintenance:** Klystrode IOTs are compact, user-friendly, easy to install and simple to maintain. You'll forget you own it!
- **Versatility:** Easily tuned across the entire UHF-TV band – 470 to 860 MHz
- **Cost-effectiveness:** Broadcasting's highest efficiency power amplifier
- **Linearity:** Meets and exceeds the extended dynamic range required for digital broadcasting

For stellar performance, specify only genuine Klystrode IOTs from Eimac.



Eimac Division
301 Industrial Way • San Carlos, CA 94070
Phone 415 592-1221 Fax 415 592-9988 • www.eimac.com



Made in USA
ISO-9001 certified

Circle (133) on Free Info Card

Don't miss us at NAB Booth #5604



Cool-Lux **S 4674**
Introducing: NiCad battery belts from 12V to 30V, 5a to 10a, 100% inspected and balanced cells, 2-year guarantee; Lead-Calcium electrolyte belts with 12V, 7A, 14A, 20A ratings; new kits for broadcast and location videography, including numerous accessories, choice of lighting fixtures.

Circle (467) on Free Info Card

Cooper Sound Systems **1404**
Introducing: CS-106+1, CS-108+1 professional audio mixers; featuring CS-104 ENG/EFP mixers.

Circle (468) on Free Info Card

Countryman Assoc Inc. **8751**
Featuring: microphone products.

Circle (469) on Free Info Card

CPC **11255**
Introducing: enhanced CPC-700 CaptionMaker Plus closed-captioning system; CPC-1000 SmartPrompter Plus enhanced teleprompter.

Circle (470) on Free Info Card

Creative Equipment **M 6558**
Broadcast-quality desktop video systems.

Circle (471) on Free Info Card

Crestron Electronics **M 6769**
Introducing: SmarTouch STS, ColorTouch CT-3500, VideoTouch VT-3500.

Circle (472) on Free Info Card

Crouse-Kimzey Company **1907**
Audio distributors; Otari digital workstation; Denon CD player.

Circle (473) on Free Info Card

Crown Broadcast **2418**
Featuring: head-worn and full line of microphones, amplifier products.

Circle (474) on Free Info Card

Crystal Computer Corporation **S 3176**
Introducing: Crystal Vision 2000, 2120E ACU fiber-optic antenna control unit.

Circle (475) on Free Info Card

CSELT **S 2074**
Circle (476) on Free Info Card

CSS Laboratories **I 3648**
Circle (477) on Free Info Card

CTE International **3824**
Introducing: 250W, 1kW DAB transmitters; 7kW UHF TV solid-state transmitter; 8-element directional antennas; microwave components: coaxial, waveguide BP filters, coaxial, waveguide circulators; E-, H-plane waveguide bends; waveguide to coaxial adapters; flexible waveguide sections.

Circle (478) on Free Info Card

Custom Mobile Productions **LA 203**
Circle (479) on Free Info Card

Cutting Edge Technologies Inc. **3006**
Featuring: broadcast audio processing products.

Circle (480) on Free Info Card

Cycle Sat Inc. **10272**
Featuring: program distribution services.

Circle (481) on Free Info Card



Daikin U.S. Comtec Laboratories **S 2338**
Circle (482) on Free Info Card

Dan Dugan Sound Design **1404**
Featuring: D-1 live microphone processor.

Circle (483) on Free Info Card

Daniel Taylor & Associates **S 1261**
Circle (484) on Free Info Card

Datacast LLC **33**
Circle (485) on Free Info Card

Data Center Management (DCM) **S 2100**
Introducing: NewsTrac, Windows-based 32-bit client-server newsroom system, designed for ease of use and intuitive functionality, customized rundown views and formats, full indexing on assignment, rundown, tape, script archives; automatic web publisher, machine control, staff/equipment scheduling, election reporting, school closings.

Circle (486) on Free Info Card

Data Check Corporation **S 2359**
Introducing: Series 2000 multi-channel video monitoring system.

Circle (487) on Free Info Card

Datatek Corporation **8814**
Introducing: addition of data routing and tie-line management to D-2800 video/audio analog/digital router; addition of digital video, digital audio and data routing to D-2600 router; D2600 router for 16x4 digital video/digital audio in 1RU package.

Circle (488) on Free Info Card

Data Translation Inc., Broadway Group **M 7154**
MPEG-I encoding hardware.

Circle (489) on Free Info Card

Dataworld **2624**
Introducing: digital TV coverage and interference analysis packages; CD-ROM database software; GIS-ready coverage data for broadcasters worldwide.

Circle (490) on Free Info Card

Davicom Technologies **9453**
Introducing: DAB, FM antennas; VHF, UHF TV panel antennas; remote-control network management software; remote control unit.

Circle (491) on Free Info Card

Davis North America **M 7166**
Circle (492) on Free Info Card

Dawn Satellite Inc. **S 3071**
Introducing: Comtech 3.8M antenna; dual-axis satellite downlink; DBS distribution wiring systems for dish sharing; DigiCipher satellite receivers.

Circle (493) on Free Info Card

DB Elettronica **1027**
Introducing: KE20 20W FM exciter; PM300 300W FM transmitter; KF300 300W, KF500 500W FM MOSFET amplifiers; KBU 150/250/500 AB class power amplifier for television; MVL microwave video link, analog and digital.

Circle (494) on Free Info Card

D&C Electronics **S 1632**
Circle (495) on Free Info Card



Circle (176) on Free Info Card

GPS MASTER CLOCK/TIME CODE GENERATOR

-Worldwide Time-

Locked to the Atomic Clock in the Global Positioning Satellite System, you can have time, date and time code within nanoseconds of UTC, any where in the world!!

ES-185

\$2495.00



STANDARD FEATURES INCLUDE:

- SMPTE/EBU, ESE, IRIG-B & ASCII Time Code Outputs
- 1PPS Output • 6 Satellite Tracking • Battery Back-up
- GPS Locked Indicator • Automatic Daylight Savings Time Correction
- Time Zone Offset • Antenna • AND MORE!!

OPTIONAL FEATURES INCLUDE:

- Parallel BCD Output • 1 KPPS • 10 MHz Output • 220 VAC • 12 VDC
- Video Inserter • Video Sync-Generator

3 YEAR WARRANTY



142 SIERRA STREET, EL SEGUNDO, CA 90245
(310) 322-2136 FAX: (310) 322-8127

Circle (134) on Free Info Card

See us at NAB Booth #7227



D

Dedotec USA Inc. 8876

Featuring: Dedolight precision lighting instruments, location light kits, projection attachments, accessories.

Circle (496) on Free Info Card

Delco Wire & Cable S 3972

Featuring: digital, analog video and audio, Clarity microphone cables; electronic multiconductor, multipair cables; custom cables for indoor, outdoor; 50Ω, 75Ω Andrew Helix products.

Circle (497) on Free Info Card

Delta Designs M 7738

Circle (498) on Free Info Card

Delta Electronics Inc. 2109

Featuring: broadcast transmission monitoring products, splatter monitor, operating impedance bridge.

Circle (499) on Free Info Card

Denon Electronics 1021

Introducing: DN-M1050R minidisc recorder, player; DN-C680 professional CD player; DRD-1408 8X speed 200-disc capacity CD-ROM jukebox.

Circle (500) on Free Info Card

DeSisti Lighting 9876

Featuring: low-power and robotic studio lighting; studio grip, suspension equipment; special

Desktop Images

Circle (502) on Free Info Card

Deutsche Telekom S 2863

Introducing: ATM in broadcast; DAB digital audio broadcasting; safe video services.

Circle (503) on Free Info Card

DGS Pro Audio 3728

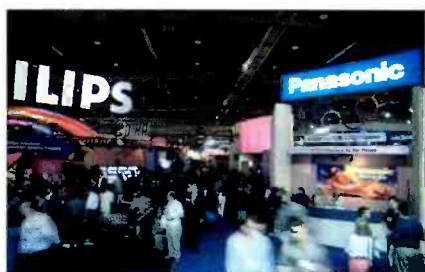
Introducing: Ring Lock DIN connectors; XLR channel identification.

Circle (504) on Free Info Card

DH Satellite LA 106

Introducing: Gibraltar IV series satellite antenna systems, mounting products.

Circle (505) on Free Info Card



Diaquest Inc. M 6341

Frame-accurate animation recording, video capture and networked video device control systems.

Circle (506) on Free Info Card

Dielectric Communications 7976

Featuring: digiTLine broadband transmission

Digigram

Introducing PCX power...

Circle (509) on Free Info Card

Digimation Inc.

Introducing: Clay Studio metaballs modeling and animation tool using clay spheres for precise control of blob interaction, branching control for complex forms; Lightning procedural object simulates lightning, electrical effects, includes control of bolt turbulence, forks, amplitude, speed and direction; Atomizer Max Space Warp for MAX particle systems uses any MAX object as a particle object, including lights and cameras; Texture Lab Elemental Tools collection of procedural mapping types representing fire, water, fog, electrics, strata and noise; Glider constrains movement of objects to surface topologies; Hair/Fur simulation of hair and fur on objects; Bones Pro to deform or animate non-jointed models; Sand Blaster particle system for MAX.

Circle (510) on Free Info Card

Digimedia/Brainstorm Multimedia S 5358

Introducing: virtual sets featuring full dynamic change of depth of field, virtual shadows, increased connectivity for THOMA VINTEN to be fully compatible versions for SGI hardware.

Circle (511) on Free Info Card

Digipath Inc. 9453

Sahara routing switchers, -32X models up to 32X32; analog video in 2RU and serial digital -2RU systems with integral monitoring to view all 32 inputs and 32 outputs; -64X serial digital prototype with 64X64 matrix.

Circle (512) on Free Info Card

Digital Audio Labs S 4065

Circle (513) on Free Info Card

Digital Audio Research S 1835

Circle (514) on Free Info Card

Digital Equipment Corp M 7425, 9770, S 3308

Products based on the Alpha series of microprocessors.

Circle (515) on Free Info Card

Digital Graphix Inc. 9325

Introducing: StillDeko integrated networked still store, operates on Windows NT, features fast browse capability, sequence payout of stills with effects and integrated tiling; TypeDeko software version 3.0 features live video resizing and cell animation.

Circle (516) on Free Info Card

Digital Processing Systems 5453

Introducing: DPS Hollywood uncompressed D1 video disk recorder with 8+ minute storage for Windows NT workstations; DPS Spark direct DV FireWire editing system for PC/Mac systems; Perception non-linear editing, animation products; DPS-465 serial digital synchronizer.

Circle (517) on Free Info Card

Digital Projection Inc. S 5831

Circle (518) on Free Info Card

Digital Video Systems Inc. M 6858

Circle (519) on Free Info Card

Digital Vision, DV Sweden AB S 2726

Introducing: AC724 Rec 724 1.5/2 Mb/s broadcast audio codec; MV345 1.5-45Mb/s MPEG2 4:2:2 4:2:0 based video and audio codec; featuring Bitpack MPEG-2 workstation; DVNR real-time image processing workstation.

Circle (520) on Free Info Card

Digits n' Art Software Inc. S 2847

Circle (521) on Free Info Card

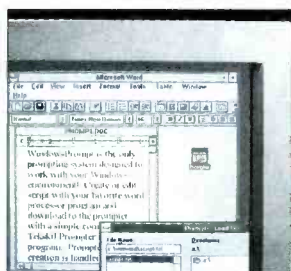
Direct Access Media S 5773

Circle (522) on Free Info Card

Don't just buy a brand name... buy Quality



SpeechPrompter



WinPrompt



TEKSKIL



Genesis

Before you make your next teleprompter purchase, make sure you've seen ALL your choices. Camera-mount or podium-style prompter heads, computer prompters or complete turn-key systems, Tekskil Industries' precision made products will exceed your expectations... not your budget.

**For more information or to arrange a demonstration, contact
Tekskil Industries Inc. (604) 589-1100 Fax: (604) 589-1185
Website <http://www.tekskil.com> E-mail: inquiries@tekskil.com**

Circle (136) on Free Info Card

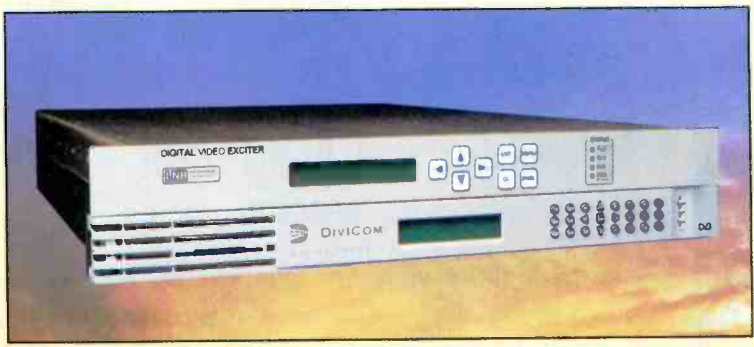


Compressed Digital Video Exciter

...from the Most Respected Names in Satellite Video Exciters and Video Compression

LNR introduces another industry FIRST, a 2-rack unit Compressed Digital Video Exciter combining an advanced encoder chip set design with state-of-the-art modulation and RF frequency conversion technology.

The DVE Series provides a complete Video/Audio to RF solution: MPEG-2 including DVB compliant modulation and RF frequency conversion to L, C or Ku Band.



The Perfect Fit

(LNR Communications, Inc. and DiviCom)

Call LNR today to start fitting your pieces together.

See us at NAB '97
Booth #4112 Radio Hall



180 MARCUS BLVD. • HAUPPAUGE, NY 11788-3795 • TEL: 516-273-7111

FAX: 516-273-7119 • Email: digitvid@lnr.com

Circle 415 on Free Info Card

www.americanradiohistory.com

Telex®

B E H E A R D I N T H E C R O W D

UHF Diversity Portable Wireless 2-Channel Tone-Coded Squelch

The Telex® ENG-500 Coming through loud & clear.

We heard you wanted premium audio quality and superior performance without interference. Okay, you've got it. In one rugged, portable system. The new Pro® ENG-500 from Telex. The first wireless microphone system that combines the benefits of a crystal-controlled system with the flexibility of real 2-channel frequency agility. This UHF true-diversity receiver features Telex's patented Posi-Phase™ Auto-Diversity and Posi-Squelch™ Tone-Code plus Auto-Suppression and is compatible with the Anton Bauer® Gold Mount system.

To order or for more information, contact
your Telex dealer today, or call (612) 887-5550.

Web page: www.telex.com, E-mail: pro.sound@telex.com

Circle (143) on Free Info Card

www.americanradiohistory.com





Disc Manufacturing Inc. (DMI) M 7442
Mastering and replication of all CD formats.
Circle (523) on Free Info Card

Discreet Logic S 2906
Software-based graphics and desktop production equipment, including Flint RT, Fire 2.0, Wire, Flame 5.0, Vapour 2.0, Frost, Inferno.
Circle (524) on Free Info Card

Display Devices Inc. S 6131
Introducing: DataLift with remote control; Sam-Lift with new locking system.
Circle (525) on Free Info Card

Di-Tech Inc. 7341
Introducing: new graphical-control system; 32x32 matrix, 2-RU 150MHz bandwidth router; 128x160 matrix, 20-RU router.
Circle (526) on Free Info Card

Diversified Marketing S 2258
Bidirectional microwave products.
Circle (527) on Free Info Card

DiviCom Inc. S 2225
Introducing: MediaView MV5, MediaView MV10, MediaView MV25 MPEG-2/DVB program encoders.
Circle (528) on Free Info Card

DNF Industries 2019
Featuring: ST300 slow-motion controller; 2-machine cuts only editor; controller for Tektronix Profile for clip-based operation, Shotlist or Playlist available for news, live production, game/show shows, sports.
Circle (529) on Free Info Card

Dolby Laboratories S 206, 8940
Introducing: Dolby Drive 8-channel digital disc recorder; DP562 reference Dolby digital (AC-3) and ProLogic decoder.
Circle (530) on Free Info Card

Doremi Labs Inc. 1619
Introducing: V1d random-access disk video recorder with serial digital interface, records full resolution video directly from Digital Betacam or D1.
Circle (531) on Free Info Card

Dorrough Electronics 7209
Introducing: Phantom Audio reference generator.
Circle (532) on Free Info Card

Doty Moore Tower Services 4938
Broadcast consultants.
Circle (533) on Free Info Card

Doug Fleenor Design S 4976
Circle (534) on Free Info Card

Drake Automation 6917
Specializing in the design, supply and installation of single- and multiple-channel broadcast automation systems.
Circle (535) on Free Info Card

Drake Electronics 6917
Circle (536) on Free Info Card

D&R North America 1721
Circle (537) on Free Info Card

DSI RF Systems Inc. I 3748
Engineering, construction firm; specializing in video, RF system design, construction, maintenance.
Circle (538) on Free Info Card

DTC Communications Inc. S 1037
Circle (539) on Free Info Card

DTN S 4670
Circle (540) on Free Info Card

Dubner International S 2934
Introducing: Scene Stealer color, Scene Stealer NT auto scene detection in video logging, archiving, editing, software interface to Targa 1000; VideoALERT with multichannel monitoring turns a PC into a signal monitor and response system for cable, broadcast use; C.A.D.E.T II offers field-accurate 3:2 pull-down cadence detection for film-tape transfers and MPEG encoding applications.
Circle (541) on Free Info Card

DVB Digital Video Broadcasting 30
Circle (542) on Free Info Card

D-Vision Systems Inc. S 3625
Introducing: D-Vision OnLINE 2.0 editing system.
Circle (543) on Free Info Card

DVS Digital Video Systems S 2550
Introducing: MovieVideo high-resolution video RAM recorder; PDD 2000 digital multi-frame video delay line.
Circle (544) on Free Info Card

Dwight Cavendish Company 6058
Featuring: compact videocassette duplicator for post-production, in-house corporate duplication.
Circle (545) on Free Info Card



EarthWatch Communications 10576
Introducing Reality 3D+ for News, Reality 3D+ weather graphics system.
Circle (546) on Free Info Card

EASI-Efficient Antenna Systems Inc. LA 503
Offering satellite system analysis and integration.
Circle (547) on Free Info Card

Eastman Kodak Company 10640
Featuring: motion-picture films; HDTV processing systems.
Circle (548) on Free Info Card

Echolab Inc. 11638
Introducing: family of digital video switchers with integral chip-store, still-store, DVE and networking; analog video switchers. New line of switchers based on Windows NT.
Circle (549) on Free Info Card

ECI Telecom S 1263
Circle (550) on Free Info Card

Econco 3916
Featuring: high-quality rebuilt power tubes and klystrons for radio and TV transmitters.
Circle (551) on Free Info Card

Edgewise Media S 1158
Circle (552) on Free Info Card

Editing Technologies Corporation 8784
Featuring: Ensemble Gold, multilinear editing combines non-linear and linear features and power; Ensemble Pro, Stiletto series edit controllers.
Circle (553) on Free Info Card

EDX Engineering Inc. 1624
Introducing: SignalPro PCS/cellular system design add-on module; SignalPro Microcell 3D ray-tracing add-on module.
Circle (554) on Free Info Card

EEG Enterprises Inc. 11158
Introducing: DI-422 VBI digital inserters; DE301 VBI control decoder; EN470 closed-caption encoder; EN370 portable closed-caption encoder; DE241A family of closed-caption decoders; VDR2 video data receiver; EDAC4 closed-caption creation software.
Circle (555) on Free Info Card

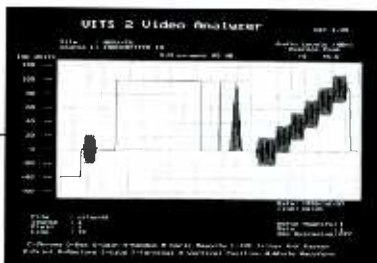
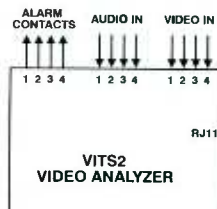
EEV Inc. 9558
Introducing: digital IOTs, air- and water-cooled versions, for terrestrial UHF digital HDTV transmitters; enhanced Stellar digital satcom amplifiers, using digital variable attenuators, types N6130D, N6150D.
Circle (556) on Free Info Card

Egripment U.S.A. 11980
Featuring: camera support products; film equipment and services; studio and facility support products; teleconferencing products.
Circle (557) on Free Info Card



VITS 2 VIDEO ANALYZER

- measure video specs and audio levels from a remote site
- select and analyze any line in the VBI or active video
- interfaces to PC via modem using non-dedicated telco line
- four audio/video inputs controlled from PC
- communications and display software supplied on 3 1/2" disk
- ideal for remote transmitters, telco video networks and cable head ends



ACTUAL COMPUTER SCREEN DISPLAY

Demo Disk Available!

broadcast video systems

40 West Wilmot Street, Richmond Hill, Ontario L4B 1H8
Tel: (905) 764-1584 Fax: (905) 764-7438 E-mail: bvstor@neocom.ca

Circle (145) on Free Info Card

See us at NAB Booth #8766

Meridian

SWITCHING SYSTEMS

IF YOU'RE THINKING DIGITAL - THINK DI-TECH

With Di-Tech you have easy choices. You can simply add a digital frame or mix digital and analog video in the same frame.

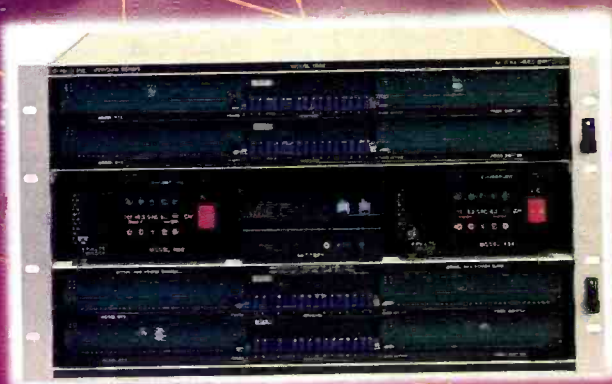


MODEL 5875
ALL IN THE SAME FRAME

- SERIAL DIGITAL VIDEO
- COMPOSITE VIDEO
- MPEG 2

ADDITIONAL MATRICES FOR:

- ANALOG AUDIO
- AES AUDIO
- RS232/422
- TIME CODE
 - DS3
 - RGB



**SIMPLY TIE THEM ALL TOGETHER WITH OUR FIELD-PROVEN
USER-FRIENDLY, 8 LEVEL VIRTUAL MATRIX CONTROL SYSTEM**



Switching Experience Since 1976

di-tech inc. 48 Jefryn Boulevard, Deer Park, New York 11729 • (516) 667-6300 • Fax (516) 695-1012



Electric Image Inc.

S 5416

Introducing: ElectricImage Animation System and Broadcast for MAC, 3D Modeler, Radiosity Renderer and NT versions; 3-D animation capabilities for broadcast and multimedia; fast rendering speed for output resolutions to NTSC (768x576) or PAL.

Circle (558) on Free Info Card

Electrohome Ltd.

M 6463

Introducing: VistaPro DLP projection system.

Circle (559) on Free Info Card

Electronic Associates

11334

Introducing: RF-Host multiple-site transmitter controller; RF Director 8- and 16-channel transmitter controller; RF Manager version 6 software upgrade; Windows CE/NEC based remote monitoring software.

Circle (560) on Free Info Card

Electronic Theatre Controls/ETC

10185

Featuring: lighting control products, dimmers, effects consoles.

Circle (561) on Free Info Card

Electrophysics Corporation

5526

Featuring: Astroscope 9323BV night-vision module for ENG cameras; Astroscope 9350 for digital cameras.

Circle (562) on Free Info Card

Electrorack Products Company

S 2928

Featuring: equipment rack products.

Circle (563) on Free Info Card

Electrosonic Systems Inc.

S 1622

Introducing: ProLite system, LCD projector using the ImageStar 31K, a videowall processor capable of dynamic displays without flicker on 31kHz monitor or projection cube videowalls; C-Through for Windows, software to compose displays of video sources and special effects.

Circle (564) on Free Info Card

Elettronica Industriale Spa

S 4661

Introducing: Linea Digitale, Cart Machine for automatic TV broadcasting with precision and simple management, accommodates from 120 to 600 cassettes, 4 to 10 VCRs and operates in four different standards simultaneously including DVCAM digital standard; TV panel Band IV-V UHF basic component for panel antenna systems, usable with digital signals; solid-state

2kW, 5kW UHF TV transmitters, NTSC and digital compliant.

Circle (565) on Free Info Card

Elmo Mfg. Corporation

M 6766

Introducing: EDP2100 LCD projector; complete line of presentation systems, visual presenters, document cameras.

Circle (566) on Free Info Card

EMBRATEL

S 2370

Circle (567) on Free Info Card

EMC Corporation

M 6551

Recently taken over by Amsterdam-based Broadware. Development of new products is now in full swing. An on-line version of the software (5.50) is currently shipping and new versions (5.51 and 5.52) of the EMC editing software are expected to ship in May and July, respectively. Other products from Broadware include EasyLog logging software and Assemblit for performing auto assemblies using Video-media's V-LAN. An NT version of EMC's editing software is currently under development.

Circle (568) on Free Info Card



EMCEE BROADCAST PRODUCTS

9237

Introducing: DigaCom DS digital wireless cable transmitter; DigaCom HSS single-drawer 50W wireless cable transmitter; TTU1000F UHF transmitter with enhancements.

Circle (569) on Free Info Card

ENCO Systems Inc.

1024

Introducing: DADpro32 digital audio delivery system.

Circle (570) on Free Info Card

Energy-Onix

4006

Featuring: frequency-agile digital STLs; ECO and MK series grounded-grid triode FM transmitters 1kW to 50kW; SST solid-state FM transmitters Legend FM transmitters 1-10kW; multiple preset dual-frequency shortwave transmitters.

Circle (571) on Free Info Card

E-N-G Mobile Systems

11347

Featuring: ENG/SNG vehicles.

Circle (572) on Free Info Card

Ensemble Designs

S 4038

Introducing: Serial Box VDA - CCIR601 to

analog component converter; changes serial digital component to analog component and analog composite (NTSC); locks signal to house reference with adjustable timing; 10-bit resolution, 2x oversampling.

Circle (573) on Free Info Card

Enterprise Systems Group Inc.

10567

Featuring: BMS broadcast management system for integrated traffic; Landmark sales-based system; Mediatech duplicator, distributor of audio/video advertising spots; Channelmatic multichannel TV automation, including MVP managed video playback; CCMS traffic, business management, automation control system software.

Circle (574) on Free Info Card

Entertainment Digital Network

S 4058

Circle (575) on Free Info Card

Ephyx Technologies Ltd.

M 7760

Circle (576) on Free Info Card

Equi-Tech Corporation

S 1065

Super-isolator series balanced power conditioning equipment for A/V facilities, rack-mountable AC systems for interference-free operation, clean equipment operation and increased dynamic range.

Circle (577) on Free Info Card

Ergo

S 3019

New product line: sliding computer keyboard shelf.

Circle (578) on Free Info Card

ERI Electronics Research Inc.

3615

Introducing Two-Tower-Tops combined HDTV and multiplexed FM antennas; FM antennas, filters, combiners; towers, structural analysis and tower reinforcing; lightning protection and grounding products.

Circle (579) on Free Info Card

ESE

7227

Introducing: LX-5105 5-inch, LX5116 16-inch self-setting/impulse analog clocks; LX-221 gen-lockable RS-170A blackburst generator; PC-471 PC interface reads ESE and SMPTE time code; ES-245 quad 1x6 audio DA, 24 independent gain controls; ES-218 1x4 audio DA.

Circle (580) on Free Info Card

ETM-Electromatic Inc.

S 3476

Introducing: C/Ku 100-400W TWTAs devices; linearized TWTAs for digital transmission; 1-for-1 redundant 400W C/Ku TWT amplifier.

Circle (581) on Free Info Card

Euphonix Inc.

3318

Introducing: Euphonix CS3000 digital control mixing system.

Circle (582) on Free Info Card

EVI Audio

10228

Electro-Voice, Vega, Klark-Teknik, DDA featuring: wired and wireless microphones, mixers, loudspeakers equalizers; compressors, gates; digital delays; cross-overs; stereo programmable graphic equalizer.

Circle (583) on Free Info Card

Evans & Sutherland

S 4216

Real-time visual simulation products for professional video applications.

Circle (584) on Free Info Card

Eventide Inc.

4101

Featuring: Harmonizer audio effects processors; video accessories.

Circle (585) on Free Info Card

Event Promotion Supply Inc.

S 1031

Circle (586) on Free Info Card

Evertz Microsystems

7160

Introducing: integrated film post-production system featuring Windows 95 graphic interface; 16/35 combination KEYCODE, Arri code reader head; added features for 8070 digital video closed-captioning encoder; 8000 series digital video D-VITC generators, readers, character inserters; LTC/VITC time code equipment.

Circle (587) on Free Info Card

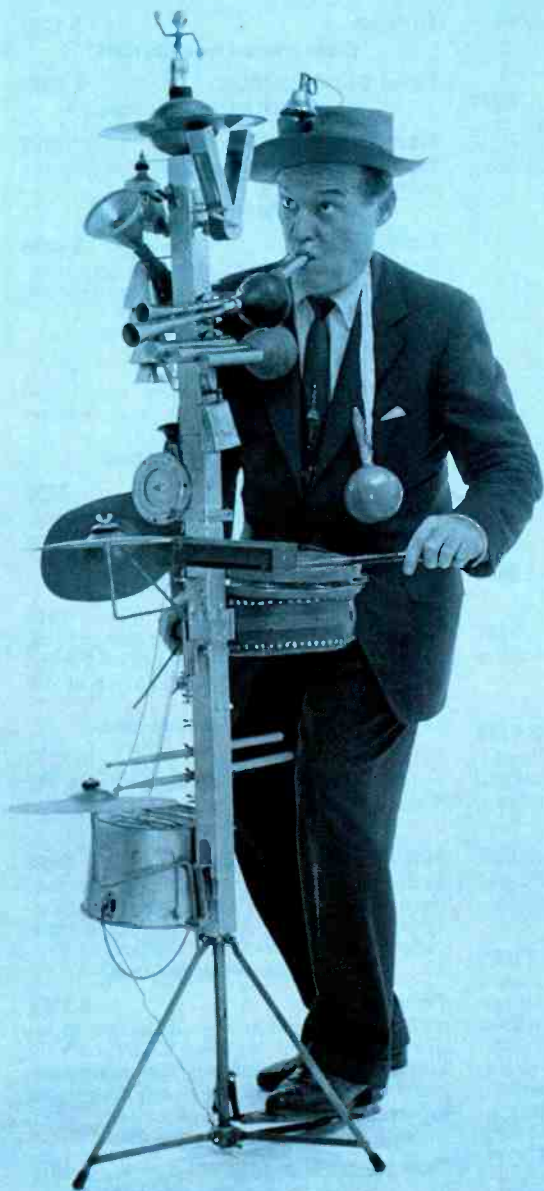
AS-101 Audio Switcher

- Illuminated and legendable control buttons
- Instant or overlap switching
- Front panel accessible level controls
- Options include: RS-232 interface, remote control, relay-follow-switch outputs
- Network proven quality and reliability

Conex Electro-Systems, Inc.

P.O. Box 1342 Bellingham, WA 98227
1-800-645-1061 FAX (206) 676-4822

Circle (146) on Free Info Card



LOOKING
FOR A
SYSTEM THAT
DOES IT
All?

Telect's VersaFrame™ 2000 is your all-in-one modular frame for professional audio and video signal management. The uniquely flexible VersaFrame supports analog and digital audio and video equipment, all with "hot swapping" capabilities to



Telect VersaFrame™ 2000 And Modules

MODULARITY YOU CAN MIX AND MATCH.

- | | | | |
|----------------|--------------|---------|-----------|
| ▪ Routing | ▪ Control | ▪ Audio | ▪ Analog |
| ▪ Distribution | ▪ Conversion | ▪ Video | ▪ Digital |

allow reconfiguring without shutting down the system. Individual Pro A/V modules dock in the VersaFrame for easy custom system configuration.



Only one audio/video frame does it all—Telect's VersaFrame. For

more information, call today: 509.926.6000 or 800.551.4567. Or visit our web site:

www.telect.com.

Circle (147) on Free Info Card

Telect
CONNECTING THE FUTURE™



Evolving Video Technologies **S 3160**
Featuring: Antero2 and Antero Ascent character and graphics generators.

Circle (588) on Free Info Card

EVS Broadcast Equipment **5053**
LSM4 channels slo-mo multicamera with simultaneous record and playback; Super LSM slo-mo disk recorder; Air Box stand-alone video server with 2-channel operation; Spot Box disk recorder with Odetics and Louth protocol; Sport Edit non-linear on-line editing with simultaneous record, edit; Video Delay time-shift delay; Air Edit multichannel commercial insert; ADA A/D, D/A converters.

Circle (589) on Free Info Card

Exabyte Corporation **S 3773**
Data recording products for the video and computer industries.

Circle (590) on Free Info Card

Exeltech **S 4075**
Circle (591) on Free Info Card

Express Video Supply **S 1030**
Circle (592) on Free Info Card

Extron Electronics **M 6633**
Featuring: line quadrupler, broadcast matrix switcher, audio, video switchers; audio, video

distribution amps; workstation scan converter; NTSC/PAL to RGB decoders.

Circle (593) on Free Info Card

E-Z UP International Inc. **4001**
Featuring: Eclipse, Encore E-Z UP Instant shelters for shade at remote locations; setup time less than 60 seconds; accessories, sideways, rail skirts.

Circle (594) on Free Info Card



Fairlight USA **8276**
DaD digital audio dubber; F.A.M.E. Fairlight audio mixer editor; MFX3 disk recorder/editor software, including Audio Base, High Speed Networking, OMF file compatibility.

Circle (595) on Free Info Card

Falcon Systems Inc. **I 5549**
Circle (596) on Free Info Card

Faraday Technology Ltd. **5141**
Featuring: deserializer; wider range of active hybrid filters than previous product.

Circle (597) on Free Info Card

Fast Electronic U.S. Inc. **S 6120**
Introducing: digital editing system for broadcast and professional markets; DV Master and Video Machine audio/video editing solutions.

Circle (598) on Free Info Card

Fast Forward Video **S 3332**
Featuring: digital video recorders for PC and SGI platforms; ISA digital video subsystems.

Circle (599) on Free Info Card

Feral Industries **11051**
Introducing: LD-2000 line doubler accepts multiple format inputs and converts to high-quality computer output; QS-400D line doubler with 4 composite and Y/C inputs, individual input scaling, positioning, freezing, programmable channel ID insertion for each channel; PV4000 flat-panel driver board converts analog input to digital 10-bit processing with zoom, positioning, converts 4:3 and 16:9 aspect ratios; MPEGNcodR MPEG-2 encoding in modular system using PCI bus, IBM chipset, compression rates of 4-15Mb/s.

Circle (600) on Free Info Card

Fiber Options Inc. **S 3538**
Featuring: fiber-optic systems: Y/C component video; video, 18-bit audio single-mode long-haul broadcast grade; long-haul broadcast-grade video signals; mini-rack enclosure for fiber-optic links; Learning Link 1-way video/audio link for distribution in educational classrooms.

Circle (601) on Free Info Card

Fibre Channel Association **M 7754**
Information about the Fibre Channel drive standard and manufacturers and products that support the standard.

Circle (602) on Free Info Card

Fidelipac Corporation **1902**
Featuring: Dynamax digital cartridge machine with magneto-optical option; Dynamax MXE consoles.

Circle (603) on Free Info Card

Film & Video Systems Inc. **S 1253**
Orion telecine, integrated dailies transfer system with color control, time-code generator, Keycode reader, data capture; Excalibur logging, conforming system tracks relationship between film, video, audio; A&V time-code generators, readers, inserters.

Circle (604) on Free Info Card

FirstCom Music **1906, 8779**
Featuring: Music On-Line network; MusiQuick search.

Circle (605) on Free Info Card

Firstcorp **S 1041**

Circle (606) on Free Info Card

Fisher Communications **S 3075**

Circle (607) on Free Info Card

Flash Technology Corporation **1509**
Featuring: dual-, high- and medium-intensity obstruction lighting.

Circle (608) on Free Info Card

Flir Systems **S 4538**
Introducing: UltraMedia-RS 35lb gyro stabilized aerial camera system that can be nose-mounted on a variety of helicopters.

Circle (609) on Free Info Card

Floral Systems Inc. **10585**
Featuring: digital video caches; hierarchical storage management; satellite dish, receiver control systems.

Circle (610) on Free Info Card

FM Systems **4855**
Featuring: S-video master automatic level control; video loss monitor with screen graphics; ACE automatic video cable equalizer.

Circle (611) on Free Info Card

Focusrite Audio Engineering **1514**
Introducing: Green Range, Red Range products; Blue ISA 230 dual compressor/limiter; products for recording, postproduction, broadcast applications.

Circle (612) on Free Info Card

Folsom Research Inc. **M 6330**
Featuring: auto sync video scan converters; VIP Video-In/Windowing peripheral.

Circle (613) on Free Info Card

FOR.A-Video Gainsville **8514**
Featuring: audio mixers, recorders; video production switcher; TBCs, synchronizers, effects systems, still stores; display, projection products; scan converters; edit controllers.

Circle (614) on Free Info Card

Force Inc. **S 1022**
#2762 Short-haul FM video/digital stereo audio fiber-optic link; #1704/5 CATV Lite VSB/AM link; #2764 InfoBiway videoconference transceiver; #2754 InfoXpressway multimedia retrieval system.

Circle (615) on Free Info Card

Forecast Consoles Inc. **S 4876**
Circle (616) on Free Info Card

Foretix Corporation of America **6357**
Featuring: audio recording, mixing equipment.

Circle (617) on Free Info Card

Foundation Telecommunications **S 1879**
Circle (618) on Free Info Card

Frezzi Energy Systems **5513**
Introducing: M-2100 advanced multifunction fast charger and power supply; Mini-Arc ultra-miniature HMI portable lights; MFIC dimmer controlled Mini-Fills; Mini-Fill line of portable lights; NP-bracket integrated lighting systems.

Circle (619) on Free Info Card

Frontline Communications **LB 204, 11970**
Introducing: digital and analog SNVs; microwave ENG vans; microwave utility vehicles; remote production units; radio vans.

Circle (620) on Free Info Card

Fujinon Inc. **11031**
Introducing: A15x8 EVM/ERD ENG lens, A10x4.8 EVM/ERD ENG lens, A20x8 ENG lens; broadcast and studio lenses.

Circle (621) on Free Info Card

Future Productions **4955**
Circle (622) on Free Info Card

FutureTel Inc. **S 3758**
Introducing: ViewPoint, PrimeView II, MPEG There Pro.

Circle (623) on Free Info Card



SERIAL DIGITAL

- serial 4:2:2 to RGB/YUV
- RGB/YUV to serial 4:2:2
- serial 4:2:2 to NTSC/PAL
- NTSC/PAL to serial 4:2:2
- parallel/serial converters

NAB BOOTH 10461

AJA VIDEO

800-251-4224

Tel 916-274-2048

Fax 916-274-9442

www.ajavideo.com

Circle (148) on Free Info Card

LEADING THE WAY INTO The Future

THE POWER OF INGENUITY

Freedom

DigaCom

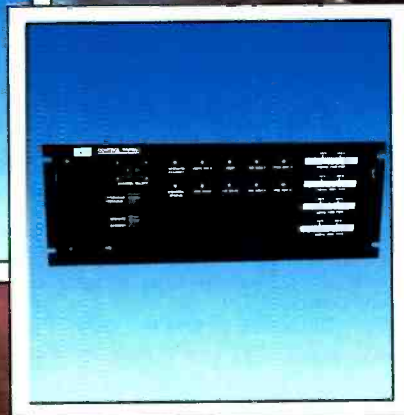


EMCEE opens new doors with the introduction of the DigaCom Series of wireless cable transmitters. Compact, frequency agile, and dual purpose service in an analog or digital format. DigaCom is designed to protect an operator's investment of today while entering the world of digital transmission tomorrow.



"FREEDOM" describes the new "F" model UHF transmitter series from the most experienced Low Power Television manufacturer in the country. Enjoy freedom from maintenance, freedom to change frequencies on site, and freedom by remote control. Continue the freedom with our 2 year warranty on equipment that is compatible with your budget.

True Agility



TRUE AGILITY... broadcast anywhere in the world, on any VHF channel (2-13), from the land, air or sea! Change broadcast standards (NTSC, PAL, SECAM) and frequency within seconds with EMCEE's TTV 1000 Agile. Its 1000 watts of power in a compact lightweight configuration make it ideal for use anywhere.

**your future
begins with...**

EMCEE

BROADCAST PRODUCTS

PO Box 68, Susquehanna Street, White Haven, PA 18661 Tel: 717-233-6193 Fax: 717-443-9257

Circle (149) on Free Info Card

www.americanradiohistory.com



Garner Industries 7230
Introducing: Garner MGD3 degausser; Eliminator 4000, Models 682, 1400L degaussers, erasers.

Circle (624) on Free Info Card

GE American Communications 7429
Featuring: satellite news gathering relay services.

Circle (625) on Free Info Card

Genelec Oy M 8168
Model 1039 active main monitoring system with two 320-liter enclosures, two 7U racks to house amplification system, active crossovers, protective circuitry.

Circle (626) on Free Info Card

General Instrument S 2206
HDTV Grand Alliance.

Circle (627) on Free Info Card

Genesis Microchip M 7535
Introducing: gmVLD8, gmVLD10 video line doubler chips; GenScale line of digital video scaling chips.

Circle (628) on Free Info Card

Geneva Aviation Inc. S 1506
Featuring: fully integrated microwave system for helicopters.

Circle (629) on Free Info Card

Gennum Corporation S 203
Introducing: Genlinx II serial digital interface products; GS9035 clock/data recover, GS9024 automatic cable equalizer, GS9021 EDH, GX9533 digital crosspoint; MultiGen digital video formatting, standards conversion product; analog signal processing products.

Circle (630) on Free Info Card

Gensler S 4977
Circle (631) on Free Info Card

Gentech Systems Corporation I 3646
Circle (632) on Free Info Card

Gentner Communications Corp. 2117
Featuring: network interface to connect multiple multiline talkshow systems together; remote transmitter control; portable transmitter for assistive listening; products for broadcast and teleconferencing applications; site control systems for transmitters.

Circle (633) on Free Info Card

Gepco International Inc. 11984
Introducing: #7537 miniature serial digital coax; 4200 series 22AWG, 4400 series 24AWG, 4600 series 26AWG multipair audio cables; Ultrahome composite cable.

Circle (634) on Free Info Card

Gerling and Associates LA 201
Circle (635) on Free Info Card

Getris Images S 1838
Featuring: Broadnews automatic news broadcasting; Digitoon software for scanning, paint and exposure sheet for animation production; upgrades for Eclipse, Venice and Hurricane, adding real morphing, multilayer autotracking.

Circle (636) on Free Info Card

Global Microwave Systems Inc. 10362
Circle (637) on Free Info Card

Glyph Technologies Inc. M 8324
Circle (638) on Free Info Card

Gorman-Redlich Mfg. Co. 1910
Featuring: EAS encoders, decoders; weather radios for NOAA weather alerts; digital antenna monitors for AM directional arrays.

Circle (639) on Free Info Card

Graham-Patten Systems 10976
Featuring: D/ESAM digital edit suite audio mixers.

Circle (640) on Free Info Card

Graseby Optonics S 3334
Expanded capabilities of SLS 9400 CRT colorimeter with software interface, including control via PC, data logging, measurements over extended periods of time.

Circle (641) on Free Info Card

The Great American Market 7221
Introducing: GAM Scene Machine; dichroic filters; GamColor CineFilters; GamFusion diffusion filters; GAM Gobo-Patterns for moving lights.

Circle (642) on Free Info Card

Group One Ltd. 1514
Circle (643) on Free Info Card

G&S Acousti-Tack Systems S 3769
Circle (644) on Free Info Card



Hafler Professional M 8364
Circle (645) on Free Info Card

Hamlet 11051
Hamlet test and measurement waveform, vector scope and stereo audio measurement products.

Circle (646) on Free Info Card

Hardigg Cases, A div. of Hardigg Ind 11178
Introducing: Roto-Molded rotationally molded cases, rugged, airtight, watertight; off-the-shelf and custom designs.

Circle (647) on Free Info Card

Harmonic Lightwaves S 2876
Introducing: TRANsend QAM modulator, TRANsend MPEG-2 encoder, TRANsend video transmission platform.

Circle (648) on Free Info Card

Harris Corporation 5909, M 6628
Featuring: Sigma, SigmaPlus IOT UHF HDTV transmitters; mobile production and uplink systems; compact SNG vehicle in Suburban or comparable 4-wheel drive van; digital networks, wireless cable systems; DAB 2000 transmitters; SuperCiter analog exciter; Platinum and Ultravision TV transmitters; CD, Quest FM transmitters; Gates, DX AM transmitter series; 360 Systems Instant Replay hard disk audio player; Sage Alerting EAS system; DVB satellite exciter; DIGIT FM exciter; DRC1000 digital audio console; Audion VoxPro sound editing system; Audio-Metrics studio furniture.

Circle (649) on Free Info Card

Harrison By GLW 3315
Featuring: console automation computer; broadcast console for television with mix-minus and clean-feed IFB options; digital audio hardware and software.

Circle (650) on Free Info Card

Helicopters Inc. LA 404
Introducing: Bell 407 helicopter with ENG configuration to include Wescam & Troll microwave equipment.

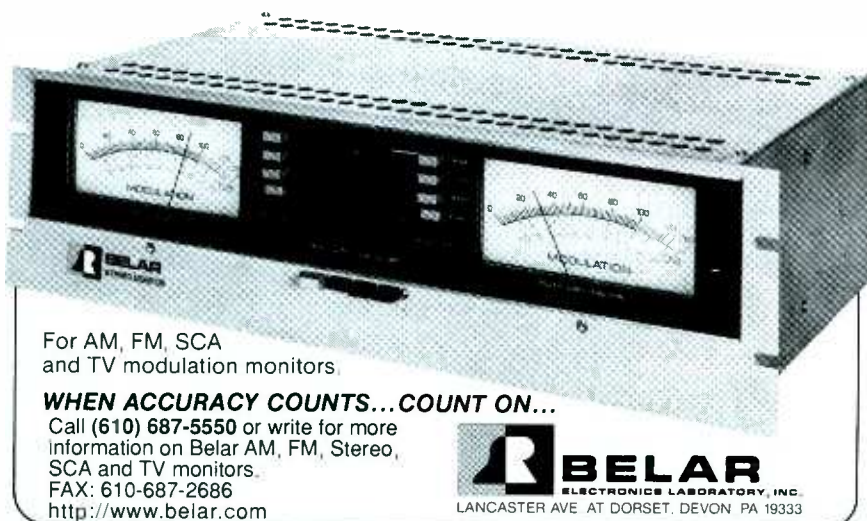
Circle (651) on Free Info Card

Henry Engineering 4012
Introducing: Audio Online caller-interactive listener/viewer information system, 16-line, hard drive storage for hours of digital audio; featuring Matchbox II, USDA and ProblemSolver products; audio switching, digital audio storage products.

Circle (652) on Free Info Card

Herman Electronics S 3121
Distributors: Belden, Belden, Brady, Kings, Neutrik, Shure, Sony, Telex.

Circle (653) on Free Info Card



For AM, FM, SCA
and TV modulation monitors

WHEN ACCURACY COUNTS...COUNT ON...

Call (610) 687-5550 or write for more information on Belar AM, FM, Stereo, SCA and TV monitors.
FAX: 610-687-2686
<http://www.belar.com>

BELAR
ELECTRONICS LABORATORY, INC.
LANCASTER AVE AT DORSET, DEVON PA 19333

Circle (150) on Free Info Card



Just digital isn't enough.

Think Small

All the features. One small package.



Get the smallest encoder/modulator available! Features interoperable video, scrambled video and network control.

Save space. Pack digital video encoding, three stereo digital audio channels *and* your QPSK modulator into 5 1/4 inches of rack space. Wrap it in a package so rugged it thrives in SNG trucks. Only Wegener delivers this much in this little space!

Get control. Boost programming flexibility with the industry's most advanced network control system. Go beyond addressability!

Control each receive site, groups of sites or all sites simultaneously. Deliver localized programming. Switch external devices. Transmit messaging and e-mail. Send data.

Change video data rates on the fly—2.5 to 15 Mbps—

to adapt to broadcast material, weather conditions and available bandwidth. Select FEC coding rate (DVB compliant, of course), output power and frequency.

Locally, use front-panel controls or a remote serial port. Over the network, a new drag-and-drop graphical interface makes Wegener's advanced Addressable Network Control System even more powerful.

Get more than just digital video. Get the Wegener difference in MPEG-2 digital video. Cut your costs and build your profits. Call our Fax-On-Demand toll-free at (800) 711-1142 for a fact sheet that will help you compare digital video products—or e-mail zmpeg2@wegener.com.

Do it today. We'll respond immediately.

**WEGENER®
COMMUNICATIONS**
(770) 623-0096 FAX: (770) 623-0698

See us at NAB Booth #11940

Circle (137) on Free Info Card

www.americanradiohistory.com



Heuris/Pulitzer **M 6476**
Introducing: MPEG Power Professional, MPEG Power Professional-2 for MPEG-2, MPEG Power Professional Macintosh, MPEG Power Premier, MPEG Power Animator; Reimay real-time MPEG-2 encoder.

Circle (654) on Free Info Card

Hewlett Packard **8071, S 2200**
Featuring: disk-based video servers; MPEG testing software; HP workstations; video print manager; MediaStream interactive products.

Circle (655) on Free Info Card

HBB Communications Ltd. **1524**
Featuring: PORTADAT portable DAT recorders; advanced media products; Cedar audio restoration equipment; loudspeakers; microphones.

Circle (656) on Free Info Card

High End Systems **10070**

Circle (657) on Free Info Card

High Tech Industries **6161**

Circle (658) on Free Info Card

Hipotronics **1917**

Featuring: medium, high power automatic voltage regulators.

Circle (659) on Free Info Card

Hitachi Denshi America Ltd **6705**

Featuring: CCD studio, portable cameras; digital triax transmission system; video file server; two video compression/transmission systems; high definition industrial camera; general-purpose low-light color CCD cameras.

Circle (660) on Free Info Card

Hi-Tech Enterprises, Inc **5932**

Distributor: authorized Sony Professional Products reseller.

Circle (661) on Free Info Card

Hi-Tech Media Inc. **M 6775**

Circle (662) on Free Info Card

H.L. Dalis **11180**

Distributor for Belden audio, video cable; Sony headsets, audio, video tape; Sony DAT recorders; Neutrik, Switchcraft audio connectors; Kinds video connectors; Tri-Loc connectors.

Circle (663) on Free Info Card

Holaday Industries Inc. **6645**

Introducing: HI-3510 personal RF monitor; Naptex RF protective clothing.

Circle (664) on Free Info Card

Hoodman Corporation **S 2926**

Hoods for glare-free viewing of monitors.

Circle (665) on Free Info Card

Horita **5155**

Introducing: PT2 portable tone generation; PW2100 portable SMPTE window inserter.

Circle (666) on Free Info Card

Horizon Music Inc. **S 6163**

Circle (667) on Free Info Card

Hosa Technology **S 1259**

Circle (668) on Free Info Card

Hotronic Inc. **5500**

Featuring: AL86 10-bit video, 20-bit audio delay for live broadcast; AT61-AU 10-bit frame synchronizer with audio delay for satellite feeds; PC-TBC computer plug-in card TBC/frame synchronizer; AP41-SP broadcast TBC/frame syn-

chronizer with freeze-frame/field, pro-amp, genlock, digital comb filter; AX81 8x2 asynchronous router for 8 non-sync signal sources, integral TBC.

Circle (669) on Free Info Card

Hughes Communications Inc. **10176**

Featuring: range of satellite communications services for premium video, voice, data, mobile, business, educational and direct-to-home consumer entertainment service; division of Hughes Electronics, subsidiary of General Motors.

Circle (670) on Free Info Card

Hughes JVC Technology **M 6544**

Model 200 single-lens ILA projector; Projection console system; Series 300 ILA projectors.

Circle (671) on Free Info Card



Hughey & Phillips Inc. **3324**

Featuring: FAA-approved obstruction lighting, controllers and remote monitoring for tall towers.

Circle (672) on Free Info Card



IBM Corporation **S 2219**

MPEG encoder/decoder chipsets.

Circle (673) on Free Info Card

IDB Systems **S 3165**

Engineering, design, integration and installation of satellite earth facilities.

Circle (674) on Free Info Card

Ideal Industries **M 7744**

Circle (675) on Free Info Card

IDX Technology **8430**

Featuring: NP-L40 40W battery chargers, downward compatible chargers; NH-200 dual box offers 80W of power; Ni-Cad batteries, NP-23dx with "fuel gauge;" Delta-4A Ni-Cad charger, GX-2 Graphix charger with LCD screen; IA-60 60W power supply.

Circle (676) on Free Info Card

IEEE Broadcast Technology Society **32**

Circle (677) on Free Info Card

IHS Communications Products **I 3656**

Introducing: CD-ROM databases Telecomm Standards, Video Standards, CommADVISOR, CommADVISOR SELECT, CommINDEX, Comm ACT96 collections.

Circle (678) on Free Info Card

Ikegami Electronics **10431**

Introducing: HDK-790A, HDL-79A, HDL-77 2/3-inch 2,000,000pixel HDTV digital studio, portable cameras; HK-525, HK-525P 2/3-inch 640,000-pixel CCD progressive scan cameras; HDL-30A 4-CCD compact HDTV cameras;

HVC-50 HDTV-NTSC downconverter; HL-43A 2/3-inch 3-IT CCD camera; DNS-101, DNS-11 digital disk camcorder; CamCutter dockable disk recorder; HL-V73, HL-V77W DVCPRO camcorders; PM-509 5-inch BW 450-TVL monitor.

Circle (679) on Free Info Card

Illbruck Acoustics **1512**

Introducing: SONEX acoustical products, curtains, active headsets; ProSpec sound barriers.

Circle (680) on Free Info Card

Image Design Film Technologies **S 6140**

Introducing: German-engineered film and video lab equipment manufactured by Schmitzer; environmentally safe TurboClean film cleaner; 16mm, Super 16mm, 35mm Super 35mm wet-gate telecine film and printer devices.

Circle (681) on Free Info Card

Image Ideas Inc. **M 7338**

Circle (682) on Free Info Card

Image Logic **5259**

Introducing: CaptionSuite automated closed-captioning, subtitling system; Log Producer for Win95 videotape logging system.

Circle (683) on Free Info Card

Image Video **6557**

Introducing: digital routing switchers in 32x32, 16x16, 16x1 formats; wideband analog routers to 200MHz in 32x32, 16x16; analog master control switcher; digital master control switcher; undermonitor display systems, Tri-color, 1.8-inch deep mounts in front of monitor.

Circle (684) on Free Info Card

Imagine Products Inc. **4561**

Introducing: Executive Producer V4.0, 32-bit for Windows, scene detection; Executive Producer V3.2 16-bit video logging; SLiM hardware interface RS-422 to Sony-S, Panasonic-M and other products; CYDpro Control Your Deck software plug-in for Adobe Premiere.

Circle (685) on Free Info Card

Imedia Corporation **S 2363**

Compression/bandwidth management software and hardware.

Circle (686) on Free Info Card

IMMAD Broadcast Services **S 4658**

Technical services to the broadcast industry including systems design and integration, project management, facilities maintenance and manufacturing.

Circle (687) on Free Info Card

Inband Corporation **S 5675**

Circle (688) on Free Info Card

IndeNet Digital Network **10567**

Digital distribution services.

Circle (689) on Free Info Card

Industrial Acoustics **10462**

Introducing: Quad Series V, Series VIII studio environments; dual-mode acoustical doors, acoustical windows, air-conditioning silencers.

Circle (690) on Free Info Card

In Focus Systems **M 7758**

Circle (691) on Free Info Card

Informix Software Inc. **I 4941**

Featuring: computer software.

Circle (692) on Free Info Card

Inline Inc. **M 6473**

IN1776 VGA/MAC to video scan converter; IN1224/IN1424 scan doublers; IN7200 ultra-high-resolution coax cable; Pathfinders HR series 200MHz RGB matrix switchers.

Circle (693) on Free Info Card

Innovation TK Ltd. **S 2444**

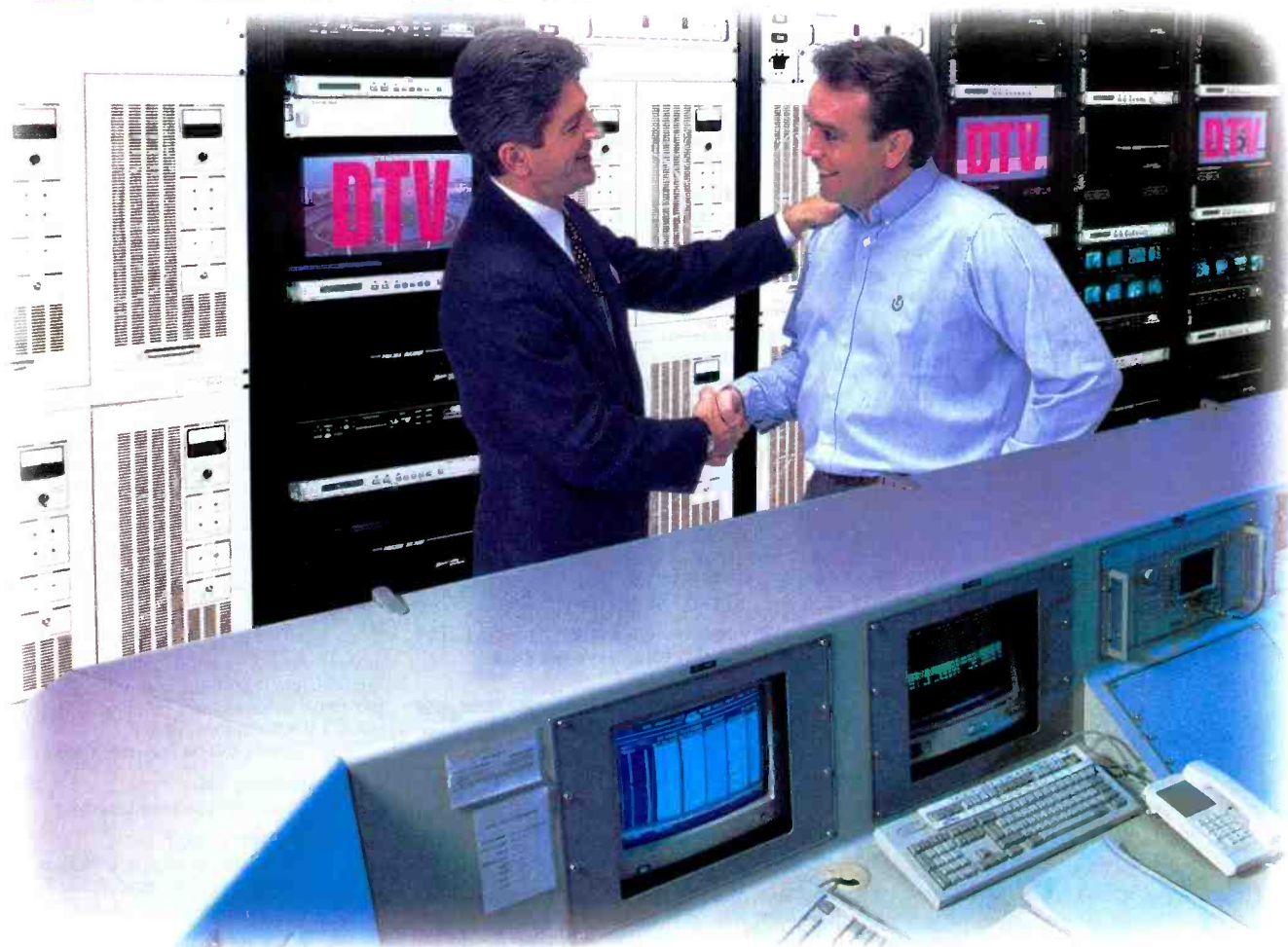
Circle (694) on Free Info Card

Innovative Quality Software **M 6860**

SAW Plus is a digital audio workstation software package providing up to 16 mono or stereo tracks of simultaneous, live playback on Windows-compatible sound cards.

Circle (695) on Free Info Card

Solid State of Mind...



DTV Transmitter Technology from ITS

Concerned about how DTV will impact your station? With our years in the broadcast industry and as a subsidiary of ADC Telecommunications, ITS Corporation is committed to provide innovative solutions to satisfy your digital broadcast requirements.

Proven Digital Technology.

As digital UHF television becomes a reality, ITS introduces the *new* ITS-8800 series of *solid state* digital UHF transmitters. The 8800 series was designed with the features and performance you would expect from a technology leader. With solid state power levels up to 5 kW average power, the 8800 series offers DTV coverage solutions for your digital or analog applications. For new digital broadcast installations, this means superior system operation and improved service to your station viewers.

Superior Performance / Reliability.

The heart of our digital transmitter is the 100% *solid state* design and a complete redundant system of amplifiers, power supplies and exciters. The 8800 series combines the best of our digital transmitter expertise in advanced feedforward amplifier design, with an ITS-built 8-VSB modulator, specifically optimized for the 8800 series. All of these features and solid state technology provide exceptional system reliability and redundancy, low voltage levels for safe operation, and low lifetime maintenance costs.

Outstanding System Operation.

With the ITS-8800 DTV solid state UHF transmitter series and our years in the broadcast industry, we understand your DTV concerns. ITS is committed to providing the highest level of product performance, system integration, and customer service and support, everyday!

It's what you expect from ITS.

Let us help you plan your migration to DTV, call us at 412-941-1500.





Innovation Optics 11482

Introducing: Campole expanding pole telescopes to 20 feet, integral miniature CCD camera; Radcam miniature camera car captures high-speed, low-angle action, includes integral remote-controlled video camera, lens; Shuttle II and Track for repeatable remote-controlled camera or product travel along curved and straight track.

Circle (696) on Free Info Card

InnoVision Technology M 7273

Circle (697) on Free Info Card

Inscriber/Mainframe Graphics S 3338

Introducing: Xtreme real-time animation playback option for InscribeCG Supreme and VideoCarte, creates multilayer spline-based key-frame animation of letters, words, logos, bit-mapped objects; Feature Pak upgrade for Inscribe CG supports Avid MCXpress, D-Vision PostSuite, Fast Video Machine, Pinnacle Alladin/Genie and In-synch Speed Razor; RTX2.0 CG development environment running in 32-bit mode under Windows NT to produce titling solutions for sports results, elections, lotteries, etc.

Circle (698) on Free Info Card



Integrated Computing Systems M 6554

Circle (699) on Free Info Card

Integrated Photonic Technology- IPITEK 10182

Introducing: improved fiber trunk chassis for narrowcast transmitter, holding up to 8 transmitters, power supply; Node Wizard network management system to control and monitor digital fiber-optic transmission system; Fiber-Trunk XT-1300, XT-1550 FO transmitters; DTX 1310 DFB laser broadband AMFO transmitter module; IMTRAN CQ-1 single-channel digital FO transmission system; DRR-9 broadband AM FO receiver; DWDM dense wavelength division multiplexing system.

Circle (700) on Free Info Card

Intelligent Media Inc. M 8349

Circle (701) on Free Info Card

Intelsat S 2370

Circle (702) on Free Info Card

Intelsis Sistemas Inteligentes S 3766

Featuring: products for CATV, satellite, TV and microwave services; audio/video compression equipment.

Circle (703) on Free Info Card

Intelvideo Inc. S 3122

Introducing: VIP Video Improvement Processor series with proprietary noise reduction technology, motion compensated digital recursive

filtering for greater than 9dB luminance and chrominance noise reduction; VP900 NTSC color corrector, VP700 NTSC color decoder, VP100 processing amplifier, VP50 ghost buster, VP10 random noise reducer, VP1000 picture quality restorer.

Circle (704) on Free Info Card

Interactive Effects S 5660

Piranha Animator digital compositing system with rotoscoping, key-frames, visual scripting and flexible playback; Amazone 3D Paint includes unwrap 3D geometry, paint over seams, multitexture maps; also Amazone Paint, Sweet 16 64-bit Paint for film.

Circle (705) on Free Info Card

Interactive Images Inc. M 8229

Featuring: digital video editing system using PCI design with CCIR 601 sampling and low JPEG compression; upgrades with NT drivers and component I/O.

Circle (706) on Free Info Card

Intergraph Computer Systems S 5432

Workstation for broadcast video production.

Circle (707) on Free Info Card

Interlace Engineering Corp. S 2559

Featuring: VMAXX grade graphics boards; VBOX video accessories.

Circle (708) on Free Info Card

International Datacasting 1703

Introducing: EchoWeb, EchoNet internet connectivity software; CR253, CR263 cable receiver PC cards ISA.

Circle (709) on Free Info Card

Internet Broadcasting System I 3754

Circle (710) on Free Info Card



Intertec Publishing Corp 5444, S 1760

Publishers of *Broadcast Engineering*, *BE Radio*, *Video Systems*, *World Broadcast News*, *Millimeter*, *TCI (Theatre Crafts International)*, *Lighting Dimensions*, *Satellite Communications*; stop by the booth for copies of magazines and subscription information.

Circle (711) on Free Info Card

Int'l Communication Inds. Assn. (ICIA) M 7340

Circle (712) on Free Info Card

Intraplex Inc. 3901

Introducing: TDM multiplexers and versatile high-quality program audio, voice and data capabilities for radio, TV; Intercom Data Trunking, T1 over Video, Duopoly/LMA and STL exhibit.

Circle (713) on Free Info Card

IRT Electronics Pty. Ltd 8864

Introducing: RWA-2310 reverse path amplifier, RWT/RWR-3080 L-band fiber optic (FO) link, VA-503/553 70MHz IF FO link; DDA-3100 34Mbi distribution amp; DVT-3220 270Mb SDI multimode FO link; DVT-3210 270Mb SDI single mode FO link; DVC-3111 270Mb SDI composite PAL/NTSC and RGB encoder.

Circle (714) on Free Info Card

IRTE S.p.A. S 2850

Introducing Walk Radio camera panoramic RF head; featuring: microwave links for TV, sound channels; parabolic antennas for microwave, satellite; microwave accessories; UHF repeaters; radio cameras; GSM, broadcasting antennas; remote controlled tracking system for on-camera microwave radio links.

Circle (715) on Free Info Card

Italiana Ponti Radio SRL 11973

Featuring: VHF/UHF transmitters; microwave links; antenna systems; HF equipment.

Circle (716) on Free Info Card

Itelco 5742

Introducing: UHF/VHF liquid-cooled solid-state transmitting systems.

Circle (717) on Free Info Card

ITS Corporation 11949

Introducing: ITS-8800 DTV solid-state UHF transmitters 1kW to 5kW average power; ITS-800A series UHF transmitters/translators from 10W to 6kW; complete line of MMDS broadband transmitter, translator and booster products; MMDS network management system for remote monitoring, control.

Circle (718) on Free Info Card



James Grunder & Assoc. Inc. 11051

Introducing: LD-2000 line doubler accepts multiple format inputs and converts to high-quality computer output; QS-400D line doubler with 4 composite and Y/C inputs, individual input scaling, positioning, freezing, programmable channel ID insertion for each channel; PV4000 flat-panel driver board converts analog input to digital 10-bit processing with zoom, positioning, converts 4:3 and 16:9 aspect ratios; Hamlet test and measurement waveform, vectorscope and stereo audio measurement products.

Circle (719) on Free Info Card

Jampro Antennas Inc. 6709

Introducing: JHD-HR2 low-power dual-dipole flat-panel antenna for VHF; Quick Step reducers; DTV system solutions.

Circle (720) on Free Info Card

J.B. Engineering Inc. S 2458

Circle (721) on Free Info Card

JBL - Soundcraft - Spirit 6940

Professional audio products including Folio Notepad, Powerpad, Portapad, Folio F1, Folio SX, XL7, Spirit 8 mixers; Absolute 4P powered speakers.

Circle (722) on Free Info Card

Jensen Tools Inc. 8860

Introducing: Tektronix TDS-200 series digital oscilloscope; JTK-88 inch/metric field service tool kit; Sescom CT-6 audio/video cable tester; F W Bell 4060 ELF meter; Fluke 7-series low-cost electrical testers; Linear Laboratories LTL100 infrared thermometer; Sper Scientific 840029 sound level meter; C K electronically insulated tool set.

Circle (723) on Free Info Card

JK Audio S 1631

Introducing: RemoteMix 3 combined telephone-line hybrid mixer and universal handset interface; QuickTap IFB telephone handset IFB tap.

Circle (724) on Free Info Card

The J-Lab Co. 6532

Introducing: portable production Fly Pack, briefcase size, component, composite with LCD monitors and downstream keying; new TV field audio mixer.

Circle (725) on Free Info Card

J.L. Fisher S 2344

Featuring: camera dollies, accessories; mic booms, accessories; camera cranes; grip equipment.

Circle (726) on Free Info Card

JLG Industries Inc. S 6171

Introducing: VP series self-propelled, vertical lifts; 26MRT compact scissor lift.

Circle (727) on Free Info Card



DON'T GAMBLE IN LAS VEGAS.

WHEN you're at NAB in Las Vegas you don't want to take any risks: spend your time wisely – come and talk to the people who've set up more digital broadcasting systems than any other company. NDS.

**See NDS at The Sands
Stand S5520**

You see, NDS has designed, integrated and installed some of the world's most ambitious and innovative broadcasting systems for some of the world's most demanding customers: BSkyB, DIRECTV, Galaxy Latin America, Star TV, Foxtel, Netsat, Innova, to name but a few.

Not the kind of people to be happy if their systems aren't up and running on time and on budget. We can give you multi-vendor systems, or our own industry leading end-to-end solution featuring these world-beating products and services.

- System 3000 – the leading MPEG2-DVB compression, multiplexing and modulation solution with thousands of encoders and multiplexers already in use.
- VideoGuard® Conditional Access system – already used by six million viewers.

- Reflex™ Statistical Multiplexing optimize picture quality and bandwidth optimization.
- 4:2:2 Chromatic encoding for dramatic picture quality for distribution.

- Provider™ the scaleable subscriber management system designed for pay media.
 - Advanced software for EPGs, NVOD and Pay Media applications.
- And global expertise in the design, integration and support of highly ambitious systems for direct to home, or via satellite, cable TV and digital terrestrial.

Don't gamble. Come and meet NDS on Stand S5520 at The Sands, NAB. We guarantee you'll go home a lot better off.

For more information call:

UK: +44 (0) 181 476 8000

US: +1 714 725 2500

Hong Kong: +852 2621 9151

Australia: +61 2 9211 6033



News Digital Systems



JMR Electronics Inc. **M 7938**
Introducing: STAX by JMR stackable desktop enclosures; fiber-optic rackmounts, communications racks, 19-inch electronic cabinets.
Circle (728) on Free Info Card

JVC Professional Products Company **8801**
Featuring: low-light cameras; C-mount computer-controlled camera; editor, player, recorder VCRs; S-VHS camcorder; W-VHS/HDTV system and Digital-S player/recorders.
Circle (729) on Free Info Card



K5600 **S 1256**
Introducing: Bug-Lite, 400W; Slimberter, 400W; linear lighting.
Circle (730) on Free Info Card

Kart-A-Bag **S 2060**
Featuring: equipment transportation products.
Circle (731) on Free Info Card

Kata Internassional **10072**
Introducing: Sunshine Yellow interior for all Kata soft cases; Audio Organizer bags; 5" MOMO monitor cover and transport bag; ASP strap for camcorders; protective production pack soft cases; Banana heavy-duty production cases; Producer's Bag briefcase with multicompartment zippered side bags, satchel-style rally bag and Pita Pack; MPS Modular Pouch System belt with suspenders fitted with pouches, pockets, holsters; ABC carrying system carries Kata cases backpack style; Expedition Backpack frame for carrying Kata cases.
Circle (732) on Free Info Card

Kata USA **8279**
US distributor for Kata Internassional.
Circle (733) on Free Info Card

Kathrein-Werke KG **9053**
Antennas and accessories for FM & TV broadcasting.
Circle (734) on Free Info Card

Kavours Inc. **9676**
Introducing: TDR Triton Doppler Radar; Triton i7; StormPro; WxWebMaster; AutoTrak; WxCAD; RADAC PC, Metpac.
Circle (735) on Free Info Card

Kay Industries Inc. **4116**
Featuring: Phasemaster rotary phase converter, produces true equivalent of utility 3-phase service from existing single-phase power source.
Circle (736) on Free Info Card

KD Kanopy Inc. **3427**
Featuring: quick setup, durable, portable canopies, tents; take seconds to assemble; customized graphics; show station call letters at remotes, promotions.
Circle (737) on Free Info Card

Keith Austin Enterprises **S 4960**
Introducing: evaluated video tape products in Betacam SP, Betacam Oxide, 3/4-inch 3/4 SP, 1-inch, VHS, S-VHS, M-II analog formats; Digi-

tal Betacam, D-2 digital formats.

Circle (738) on Free Info Card

Kencast Inc. **S 1054**

Circle (739) on Free Info Card

Kendallizer Corp. **S 4370**

Circle (740) on Free Info Card

Keystone Communications **5617**
Provider of transmission services for radio and television broadcasters.

Circle (741) on Free Info Card

K & H Products Ltd. **8870**

Introducing: The Storm Coat heavy-duty weather protection for camcorders.

Circle (742) on Free Info Card

Kings Electronics Company Inc. **8851**

Featuring: digital Tri-Loc connectors, digital video jackfields; 75Ω BNC connectors; video patch plugs.

Circle (743) on Free Info Card

Kino Flo Inc. **S 2460**

Introducing: high-output 120Vac DMX full-range 1-100% dimming system for film, video, stage; 15-, 48-inch bipin fluorescent lamps; Mega-Flow 6-, 8-foot fluorescent luminaires; KF29 HO lamp, full-spectrum fluorescent matches warmth of studio quartz lights.

Circle (744) on Free Info Card

Kintronix Labs Inc. **3609**

Featuring: single-pole, double-throw RF connectors; AM transmission system products.

Circle (745) on Free Info Card

Kline Towers **11867**

Featuring: design, fabrication and erection services of broadcast and special antenna support structures, featuring latest advances in ice protection, component style construction.

Circle (746) on Free Info Card

Knox Video **8867**

Featuring: Chameleon 64 routing switcher; 16x16, 8x8 and 12x2 full-matrix A/V routers; character generators.

Circle (747) on Free Info Card

Korg USA Inc. **S 5763**

Introducing: SoundLink digital recording systems; 168RC recording console, digital 16x8x2 with 2 ADAT optical inputs, 8 analog inputs with 18-bit A/D converters, effects processors, console animation; Trinigy Music Workstation DRS line.

Circle (748) on Free Info Card

Kramer Electronics **7873**

Introducing: family of digital distribution amplifiers and switchers for broadcast; Video tester; VM-6N3 1:5 analog/SDI video/audio distributor; V15 5x4 video/audio stereo matrix switcher; VM3 mini audio+video distributors; TP family video transmitters, receivers; BC-1044N broadcast video component distributors; AD-5N 1:5 balanced audio distribution amplifiers.

Circle (749) on Free Info Card

Kratek Corporation **7873**

Circle (750) on Free Info Card

KW/2 Lighting Products **S 1025**

Circle (751) on Free Info Card



The Ladder Works Inc. **I 5456**

Circle (752) on Free Info Card

LandSea Systems Inc. **I 3745**

Circle (753) on Free Info Card

LDL Communications **9953**

Introducing: Landmark series DTV digital TV

transmitters for ATSC standards featuring new control system technology and ATSC compliant exciter; Digital Radio transmitters for L-band and Band III, both compatible with Eureka 147; LeBlanc demonstrations for tower analysis to determine capabilities of existing towers to hold support additional antennas for digital services; Larcen TTC lower power TV, FM transmitters.

Circle (754) on Free Info Card

Leader Instruments Corp. **8760**

Introducing: SDI compression artifact analyzer, SDI test generators for variable/calibrated jitter and noise; monitors; composite, component signal sources, monitors; RF level, spectrum meters, RF generators; analog/digital oscilloscopes.

Circle (755) on Free Info Card

Lectrosonics Inc. **8372**

Introducing: synthesized UHF wireless microphone systems.

Circle (756) on Free Info Card

Lee Filters **S 4676**

Circle (757) on Free Info Card

Leightronix Inc. **11561**

Featuring: time-event controllers for automated playback, recording, switching; telephone remote equipment control; commercial insertion control software; interactive video, custom control engineering, design, development.

Circle (758) on Free Info Card

Leitch Inc. **8640**

Introducing: MPEG-2 compression system with noise-reduction module for 4:2:2 profile at main level; serial digital LogoMotion logo generator displays animated logos in full component digital format and static logos of various sizes; serial logo generator and keyer/insertor stores logo in uncompressed 4:2:2:4 digital format with full linear key storage; new family of digital conversion products to fit in one-, two-rack 6800 frames for independent conversion needs or using DigiBus digital conversion system.

Circle (759) on Free Info Card

LEL Computer Systems **M 7941**

The Video Pipeline, rack-mount, turnkey distribution of MPEG-1 data streams via T1, E1, RS-422, V.35, Ethernet transmission; LEL/Stellar One Set Top receiver/decoder; closed-captioning, serial device control for Video Pipeline.

Circle (760) on Free Info Card

Lemo USA Inc. **8835**

Introducing: hybrid fiber-optic connectors; circular quick connect/disconnect connectors.

Circle (761) on Free Info Card

LE Nelson Sales Corporation **11241**

Featuring: stage and studio lamps by Thorn, GE.

Circle (762) on Free Info Card

Lighthouse Digital Systems Inc. **6532**

Introducing: Oz analog and digital switcher for audio; K-series analog, video, data switchers; DCx series expandable 1-RU audio, video switchers; modular system audio, video fiber links, converters.

Circle (763) on Free Info Card

LIGHTING DIMENSIONS
Lighting Dimensions Magazine 5444, S 1760
Circle (764) on Free Info Card

Lightning Eliminator & Consultants **8756**

Introducing: SP-series Direct Buss surge protector; Chem-Rod Expansion Disk.

Circle (765) on Free Info Card

Lighttech Group Inc. **S 4567**

Introducing: CFL 155 compact fluorescent fill light fixtures for TV studio, teleconferencing.

Circle (766) on Free Info Card



Audio Solutions

We'll help you put the pieces together.

**Audio testing requires specialized solutions.
Audio Precision offers three lines of audio analyzers.**

ATS-1

- ❖ Analog audio test system - 2 channel
- ❖ Advanced LCD front panel display and controls
- ❖ Smart GPIB interface w/HP 8903B compatible mode
- ❖ High performance, cost effective:
Residual Noise $1.5\mu\text{V}$,
22Hz-22kHz
System THD+N $\leq 0.0025\% + 3\mu\text{V}$



System Two

- ❖ A new standard for today's digital and analog systems
- ❖ Analog and digital audio testing
- ❖ Digital interface testing and measurement
- ❖ PC/Multimedia audio testing
- ❖ Reduced bit-rate codec testing for audio & telecom
- ❖ Digital converter testing
- ❖ Analog residual THD+N $\leq 0.0004\%$ ($\leq -108\text{dB}$)
- ❖ Digital analyzer noise $\leq -140\text{dBFS}$, wideband

System One

- ❖ The Recognized Standard for analog & digital audio
- ❖ versatile and fast

- ❖ PC or GPIB interface
 - APWIN for Windows 95™
 - GPIB drivers for National Instruments LabView/LabWindows
- ❖ High speed FASTTRIG synchronous multitone testing on DSP versions
- ❖ Dual Domain™ version includes digital I/O
- ❖ Total analog system THD+N residual $\leq 0.001\% + 1.5\mu\text{V}$, 22Hz-22kHz

Thousands of customers worldwide choose Audio Precision analyzers because we offer a complete family of audio testing solutions.

Our worldwide force of Audio Precision representatives will be pleased to provide further information and help you find solutions for your audio testing.



**Audio
precision**

P.O. Box 2209
Beaverton, OR 97075-3070
(503) 627-0832, 1-800-231-7350
FAX: (503) 641-8906

Circle (140) on Free Info Card

INTERNATIONAL DISTRIBUTORS: **Australia:** IRT Electronics Pty. Ltd., Tel: 2 439 3744 **Austria:** ELSINCO GmbH, Tel: (1) 815 04 00 **Belgium:** Trans European Music NV, Tel: 2 466 5010 **Brazil:** INTERWAVE LTDA, Tel: (21) 325-5351 **Bulgaria:** ELSINCO Rep. Office Sofia, Tel: (2) 958 12 45 **Canada:** GERRAUDIO Distribution, Tel: (416) 696-2779 **China, Hong Kong:** A.C.E. (Int'l) Co. Ltd., Tel: 2424-0387 **Croatia:** ELSINCO Rep. Office Zagreb, Tel: 1 68 19 14 **Czech Republic:** ELSINCO Praha spol. s r.o., Tel: (2) 49 66 89 **Denmark:** nbn Elektronik aps, Tel: 36 57 15 11 **Finland:** Genelec OY, Tel: 17 813 311 **France:** ETS Mesureur, Tel: (1) 45 83 86 11 **Germany:** RTW GmbH & Co. KG, Tel: 221 70913-0 **Greece:** KEM Electronics Ltd., Tel: 1 67 48514/5 **Hungary:** ELSINCO Budapest KFT, Tel: (1) 269 18 50 **India:** Electro Dynamics, Tel: 512 364713 **Israel:** Dan-El Technologies, Ltd., Tel: 3-647 8770 **Italy:** Audio Link s.n.c., Tel: 521 648723 **Japan:** TOYO Corporation, Tel: 3 (5688) 6800 **Korea:** B&P International Co., Ltd., Tel: 2 546-1457, B&P (Kumi Office), Tel: 546 53-7347/8 **Malaysia:** Test Measurement & Engineering Sdn.(Selangor), Tel: 3 734 1017, Test Measurement & Engineering Sdn. (Penang), Tel: 4 6422088 **Netherlands:** Heynen B.V., Tel: 485 496 111 **New Zealand:** Audio & Video Wholesalers, Tel: 7 847-3414 **Norway:** Lydcosult, Tel: 69-178050 **Poland:** ELSINCO Polska sp. z o.o., Tel: (22) 39 69 79 **Portugal:** Acutron Electroacustica LDA, Tel: 1 9414087 / 9420862 **Singapore:** TME Systems Pte Ltd., Tel: 747-7234 **Slovakia:** ELSINCO Slovensko s.r.o., Tel: (7) 784 165 **South Africa:** SOUND FUSION MF-G, Tel: 11-477-1315 **Spain:** Telco Electronics S.A., Tel: 1 531-7101 **Sweden:** TTS Tel & Ton Studietechnik AB, Tel: 31 52 51 50 **Switzerland:** Dr. WA Gunther AG, Tel: 1 910 41 41 **Taiwan R.O.C.:** Double Advance Tech., Tel: 2-596 0696 **Thailand:** Massworld Company Ltd., Tel: 2-294-4930 **United Kingdom:** Thurby Thandar Instruments, Ltd., Tel: (1480) 412451



Lightware Inc. 8853
Introducing: Lightwalker professional rolling case for the traveling videographer; Waterproof Tote, lightweight for the hazardous location shoot.

Circle (767) on Free Info Card

Linear Equipamentos Electronic I 4845
VHF TV transmitter, VHF satellite TV translators, UHF satellite TV translator, microwave transmitters, microwave receivers, microwave news gathering, microwave STL, microwave modulators.

Circle (768) on Free Info Card

Link Electronics Inc. 9081
Modular processing, distribution product family; digital closed-caption encoder, decoder and data recovery; routers; audio/video products for the digital frame to mix analog and digital.

Circle (769) on Free Info Card

Linker Systems Inc. M 7633
Featuring: animation and graphics software for Macintosh, SGI and Windows NT platforms.

Circle (770) on Free Info Card

Lipsner-Smith 7345
Motion-picture film cleaning systems for professional applications; CF3000-Mk VI solvent-based ultrasonic system; EXCEL non-immersion IPA cleaning system with enhanced cleaning power.

Circle (771) on Free Info Card

Listec Video Corporation 8652
Introducing: models T-2011, T-2012, T-2014 VU-LITE series active matrix flat-panel prompters for field and studio, 11-, 12- 14-inch displays with fold-down or traditional mirror/hood assembly; Windows and DOS prompting software.

Circle (772) on Free Info Card

Litton Electron Devices 4556
UHF Klystrons.

Circle (773) on Free Info Card

LM Engineering S 4972
Composite series cases, featuring 30% weight reduction, overall improvement in strength.

Circle (774) on Free Info Card

LNR Communications Inc. 4112
Featuring: digital video flyaway satellite system with voice communications; low-profile Ku-band video exciter.

Circle (775) on Free Info Card

Location Sound Corporation 2627
Distributor: Lectrosonics 200 series wireless mics; PSC M4+ mixer; K-Tek boompoles; Brüel & Kjær lavalier.

Circle (776) on Free Info Card

Lockheed Martin S 3073
Circle (777) on Free Info Card

Lockheed Martin Microwave S 2472, 1501
Introducing: Narda 8700 series "D" probes; Model 8712 RF survey meter; Model 88440-0.5 RF personal monitor.

Circle (778) on Free Info Card

Logic Devices Inc. S 5772
Circle (779) on Free Info Card

Logitek Electronic Systems 2521
Introducing: CS-10 digital console for on-air radio; Ultra-VU LED audio level meter with

alarm outputs showing VU and true peak levels, alternate modes for loudness and phase information display.

Circle (780) on Free Info Card

Louth Automation S 3619
Featuring: PC-based media management and automation products; software-based multi-channel automation system, automated recording of master spots, segmenting of program material; automated recording and timing of incoming material.

Circle (781) on Free Info Card

Lowel-Light Mfg. Inc. 6925
Introducing: compact dimmable focusing on-camera light; Lowel Lightbags soft cases for Lowel equipment; Eggcrates for Rifa-Lites control for portable umbrella-like soft light; Rifa and FrenL kits.

Circle (782) on Free Info Card

L.T.M. Corporation of America 6858
Featuring: HMI lights, Bonzai, Sungun, Cinepar lights; mic booms; windmachines; electronic and magnetic ballasts.

Circle (783) on Free Info Card

Lucasey Manufacturing Corporation 11261
Manufacturer of TV mounting and security devices.

Circle (784) on Free Info Card

Lucent Technologies S 2856
Introducing: RIO Designer Professional 32-bit vector and raster-based graphics software, available for Windows NT with Intel, Alpha, MIPS and PowerPC; Rio Designer 32-bit, graphic design and illustration software also Windows 95, 3.1 creates photo-realistic images; RIO for MS-DOS, capable of input, output to live video.

Circle (785) on Free Info Card



Mackie Designs M 8038

Introducing: Digital 8-Bus 48x8x2 digitally controlled console works like the analog console you're used to using with integral meter bridge hard-disk storage, 8MB RAM, 24-channel analog tape I/O, UltraMix II automation; HUI human user interface digital audio workstation featuring eight motor faders, dedicated per channel pan and send encoders and controls, tactile illuminated switches, MIDI I/O, expansion port, RS-232/-422 port for computer connection; HR824 high-resolution active studio reference monitor with mass-loaded resistivity-damped 6th order system of two 6-1/2 inch passive radiators.

Circle (786) on Free Info Card

Macromedia M 7333
Develops and markets authoring and digital arts software for creating multimedia applications.

Circle (787) on Free Info Card

Macrovision Corporation 4957
Featuring: satellite scrambling system; individually addressable video scrambling system for broadcast; video scrambling system for low power consumption, high-quality surveillance.

Circle (788) on Free Info Card

Magellan Geographix I 5453
Supplier of digital maps for broadcast presentation, publication and multimedia applications.

Circle (789) on Free Info Card

Magic Teleprompting S 2936
Prompting systems.

Circle (790) on Free Info Card

Magni Systems Inc. S 5268
VGAP 16 VGA card with video output and overlay.

Circle (791) on Free Info Card

Magnum Towers Inc. 2324
Radio, TV and communications towers.

Circle (792) on Free Info Card

Management Graphics Inc. 7061
Featuring: Solitaire image recorders.

Circle (793) on Free Info Card

Marco Inc. 11182
Featuring: edit suite furniture; control room consoles; equipment racks, accessories.

Circle (794) on Free Info Card

Market Image S 1672
Circle (795) on Free Info Card

Marshall Electronics S 1931
Introducing: Tajimi push-pull BNC connectors; Mogami high-definition RGB snakes, patchcords featuring push-pull BNC connectors; Mogami high-definition 75Ω RGB cables; Mogami 110Ω digital audio snake and console cable.

Circle (796) on Free Info Card

Martinsound 1301
Circle (797) on Free Info Card

MATCO 11340
Introducing: MA-204B Windows-version machine-control and commercial-insertion system; Video Server.

Circle (798) on Free Info Card

Matrox Electronic Systems Ltd. S 2732
Featuring: PC-based digital video hardware, software; video mixer, DVEs; JPEG codec, audio mixer, SCSI controller; multichannel analog video I/O.

Circle (799) on Free Info Card

Matthews Studio Equipment 5632
Matthews Magic, Just Grip.

Circle (800) on Free Info Card

Maxell Corporation 8825
Introducing: Betacam SP, D-2 digital, Digital Betacam, D-3 digital videocassettes; DVD; CLS cleaning solution.

Circle (801) on Free Info Card

McCurdy Radio Industries Ltd. 6917
Introducing: D-MAS multi-channel TV broadcast automation, interfaced to broadcast equipment, traffic systems; Flexible Cache Control and Fibre Channel interfaces for seamless integration to video servers, library systems, Tektronix Profile; McCard digital audio storage system; DCS3000 digital intercom; ATS-100 extended range VU/PPM meter.

Circle (802) on Free Info Card

MCL Inc. 11353
Featuring: high power amplifiers and accessories; TWTs with integral linearizer; universal redundancy controller.

Circle (803) on Free Info Card

McRoberts Software M 7746
Introducing: Comet/CG 3.5, Comet/CG animation modules.

Circle (804) on Free Info Card

Media 100 Inc. 5458
Featuring Media 100 desktop editing equipment.

Circle (805) on Free Info Card

Media Computing Inc. 9561
Broadcast automation packages.

Circle (806) on Free Info Card

Media Concepts 6360
Featuring: used broadcast TV production equipment.

Circle (807) on Free Info Card

MediaMania M 6676
Circle (808) on Free Info Card

THE BIG PICTURE



A complete vision of broadcast? No one has a clearer view than Thomson Broadcast Systems. By focusing the most advanced broadcast technologies within a single company of the THOMSON multimedia group, today we offer customers a comprehensive approach to meeting their needs. From cameras to digital studios to MPEG2 satellite systems to multiservice cable network systems, our broad vision translates to clear competitive advantages for you. Including guaranteed, end-to-end system compatibility. World-class solutions and product expertise. And the ability to provide rapid, individualized service. The big picture from Thomson Broadcast Systems. From our unique vantage point in digital technology, it's never been easier to picture your success!



THOMSON BROADCAST SYSTEMS

Head Office: France - THOMSON BROADCAST SYSTEMS
17, rue du petit-Albi - BP 8244 - 95801 Cergy-Pontoise Cedex
Tél: (33-1) 34 20 70 00 - Fax: (33-1) 34 20 70 47

USA & Canada: THOMSON BROADCAST inc.
49, Smith Street, Englewood, NJ 07631
Tel: (1-201) 569 16 50 - Fax: (1-201) 569 15 11

Circle (151) on Free Info Card

www.americanradiohistory.com



MediaPEGS **M 7366**
Circle (809) on Free Info Card

Mega Drive Systems **S 4120**
Introducing: Aria Fibre Channel disk array; Enterprise Ultra E-8, EV1000 RAID system.
Circle (810) on Free Info Card

Mercury Computer Systems Inc. **M 7573**
Circle (811) on Free Info Card

Merging Technologies **M 6673**
Introducing: Pyramid virtual studio Version 1.2 digital audio workstation; audio interface unit A/D, D/A audio I/O interface.
Circle (812) on Free Info Card

Metacore **M 7444**
Circle (813) on Free Info Card

MetaTools Inc. **M 8055**
MetaTools Digital Theater features imaging products for special effects generation.
Circle (814) on Free Info Card

MGE UPS Systems **S 3770**
Circle (815) on Free Info Card

Microboards Technology Inc. **S 4569**
Circle (816) on Free Info Card

Micro Communications Inc. **5607**
Introducing: DTV/NTSC panel antennas, adjacent channel combiners; 10-50kW UHF constant impedance filter; compact UHF Switchless (Magic-T) combiners.
Circle (817) on Free Info Card

Micron Audio Products Ltd. **8876**
Featuring: complete line of SQN stereo/mono audio mixers for ENG/EFP, film, studio; TRAM electret microphones, accessories.
Circle (818) on Free Info Card

MicroNet Technology Inc. **M 8225**
Development of productivity solutions for the digital audio/video market.
Circle (819) on Free Info Card

MicroNet **S 3763**
Telecommunications services emphasizing Video Transmission.
Circle (820) on Free Info Card

Microspace Communications Corporation **S 3360**
Provides video, data and audio transmission services designed for antennas. Operates on domestic and international satellites.
Circle (821) on Free Info Card

Microwave Filter Company **8771**
Introducing: low-cost channel deletion filters for CATV; bandpass filters, diplexers for UHF, MMDS.
Circle (822) on Free Info Card

Microwave Radio Communications **7421**
Introducing: QM-445Mbps/16QAM modem; Millennium triband receiver.
Circle (823) on Free Info Card

Middle Atlantic Products **4538**
Circle (824) on Free Info Card

Mier Comunicaciones, S.A. **2412**
TV transposers, TV transmitters, TV satellite receivers, modulators, antennas, filters, multiplexers.
Circle (825) on Free Info Card

Milestek Inc. **S 3542**
Featuring: interconnect products for audio, video and computer networks; patch panels; BNC connectors, tooling; video hum stoppers; testers; cable; racks; marking systems; wire management products; Ethernet adapter cards; hubs.
Circle (826) on Free Info Card

Miller Fluid Heads (USA) Inc. **9376**
Introducing: Miller Arrow 50 fluid head, new approach to ENG/EFP camera control, eight selectable drag settings, 4-position counterbalance system, illuminated spirit level, 100mm bowl mount; Miller Pro-Jib, Petroff range of matte boxes.
Circle (827) on Free Info Card

millimeter®

Millimeter Magazine **5444, S 1760**
Circle (828) on Free Info Card

Minerva Systems Inc. **I 5545**
Manufacturer of MPEG publishing systems, has expanded its line of MPEG encoding systems to include a desktop solution.
Circle (829) on Free Info Card

Minolta Corporation **5503**
CA-100 color analyzer; XY-1, CL-100 handheld colorimeter; CS-100 handheld non-contact colorimeter.
Circle (830) on Free Info Card

Miralite Communications **S 3463**
Featuring: products for video compression and distribution of content by satellite, telco, CD-ROM; earthstations.
Circle (831) on Free Info Card

Miranda Technologies Inc. **11425**
Introducing: VIVO digital video gateway for SGI O2 workstation; fully integrated audio products for Miranda imaging series and ICP-S remote control software for IRIX and Microsoft Windows NT; Miranda imaging series solutions for 4:2:2 users; Espresso digital video gateway.
Circle (832) on Free Info Card

miro Computer Products **M 8222**
Introducing: miroVIDEO DV100 bridge between digital camcorders and desktop computers; DC30 digital video editing solution for PCI-based Power Macintosh systems for studio-quality video, CD-quality audio at data rates to 6MB/s.
Circle (833) on Free Info Card

Mirror Image Teleprompters **5857**
Introducing: 14-inch VGA LCD panel teleprompter; portable/fold-up teleprompters.
Circle (834) on Free Info Card

Mitsubishi Electronics America Inc. **S 1644, S 2044**
Display products including LCD Projectors and Diamond Scan video monitors.
Circle (835) on Free Info Card

MMS Multi Media Systems **S 2550**
Introducing: ProntoVideo-RBG D1/4:4:4 video disk recorder; ProntoVision HDTV disk recorder 4-60 minutes; VPS2000 NT workstation for video production.
Circle (836) on Free Info Card

Modulation Sciences **11253**
Introducing: PTR-100 precision video receiver, demodulator for accurate measurement of visual and aural signals.
Circle (837) on Free Info Card

Mohawk/CDT **11283**
Introducing: Spectrum digital audio, video cables, AES/EBU digital audio cable, serial digital video cable, fiber-optic/copper composites; stage boxes, breakout boxes, flexible digital snake cable.
Circle (838) on Free Info Card

Mole Richardson **7143**
Lighting products, lamps, fixtures.
Circle (839) on Free Info Card

Morris Mobile Studios **LA 306**
Circle (840) on Free Info Card

Moseley Associates **2602**
Introducing: Starlink 9000 digital STL designed to solve audio problem conveyance using T1 and RF modes; MRC 2, MRC 1620 remote control products; mastercontroller, TaskMaster20 PC remote control products; PCL 6000 STL, PCL 6000 multichannel option aural STL, DSP 6000 digital audio transmission equipment for A/V STL equipment.
Circle (841) on Free Info Card

Motion Analysis **M 8040**
Circle (842) on Free Info Card

MountainGate **11914**
Introducing: Fibre Channel (FC) Network Solution to transport digital media at high speeds, to build storage systems with capacities large enough for digital video; FC VDR video disk recorder for use by a workgroup with Fibre Channel disk array storage; Stampede disk array family to 23.4GB on single 5.25-inch drive with 8-bay, 4-drive chassis, also accommodates Ultra-Wide SCSI disk drives, 4GB or 9GB drives; Stampede DLT 40GB DLT module for high performance backup/restore capabilities; RCM RAID control module operates as a hub to control up to 5 Stampede disk arrays (468 GB); Chaparral N-300 storage library, uses 3590 compatible tape drives with 9GB/s transfer rate, each tape capable of 10GB storage.
Circle (843) on Free Info Card

MPO Videotronics **S 4479**
Circle (844) on Free Info Card

Multidyne Electronics Inc. **8783**
Introducing: FTX 200 low-cost video, audio, data fiber-optic system; FTX 195 AES/EBU digital audio FO system; FTX 100 video, audio, data FO multiplexer; TS20 NTSC test signal, sync, VITS inserter, video/audio ID generators; TS12 signal generator; UTIL-200 video distribution tray.
Circle (845) on Free Info Card

Multimedia Accessories Ltd. **4843**
Distributors of interface products for broadcast and pro video; 1996/97 Cable & Accessories catalog; featuring video, audio, computer cables, connectors, adapters, adapter kits, DAs, routers and video processing equipment.
Circle (846) on Free Info Card

Myat Inc. **7002**
Introducing: high-efficiency, fault tolerant UHF/HDTV power combiner with matched load; Featuring: complete line of high-quality rigid transmission lines, components, accessories.
Circle (847) on Free Info Card



Nada-Chair **M 6979**
Introducing: Sitpack, ergonomic back support with built-in camera storage, etc.
Circle (848) on Free Info Card

NADY Systems **6808**
Introducing: Nady 551VR, 661VR, 950GS wireless mic systems.
Circle (849) on Free Info Card



YOU WOULDN'T BELIEVE HOW MANY OF THESE LITTLE STICKERS WE'VE GONE THROUGH LATELY.

Ten years ago, we started out with a simple idea: why not create professional self-powered speakers that fit easily into 1 or 2U of rackspace, rather than forcing bookshelf speakers into a place they weren't designed to go?

Our customers liked the idea. Then, they needed more options. Like multiple analog and digital inputs. So we created them.

Then they asked for even more solutions. Like level metering & phase indication. Audio routing, source selection and error alarms. We did it. And

everyone liked our new stuff.

But, unfortunately, engineers are rarely satisfied. New technology creates new challenges that demand new solutions. We talked to a few friends who also keep coming up with new stuff, and convinced them we'd make good partners.



Bel Digital Audio, closely associated with the BBC and now with Wohler, manufactures delay synchronizers, digital audio "break-out boxes" and profanity-delay products.

Chromatec, a world leader in

the field of In-Picture audio metering, brings a convenient single-point means to

@chromatec simultaneously monitor audio and video. Now you can get their new stuff from us.

We've also partnered with Oxtel, the world's largest supplier of logo insertion products. Plus, they manufacture keying and mixing products, text & timecode inserters and embedded audio & AES mixers.



Want to see some new stuff? Stop by booth 9773 at NAB '97. Or call us at (415)589-5676.



Wohler Technologies
Innovative Broadcast Solutions

Circle (152) on Free Info Card

www.americanradiohistory.com



Nagra Kudelski SA 7005
Featuring: NAGRA-D digital audio recorder; ARES-C portable stereo recorder with mono record time of 40 minutes on 20MB PCMCIA card, copy, edit, G722, MUSICAM ISO/MPEG Layer II compression, ISDN option; NAGRAVISION digital, NAGRA PLUS analog pay-TV with subscription management, encoding, decoding, network control, electronic program guide production, prepaid/impulse pay-per-view.

Circle (850) on Free Info Card

Nalpak Video Sales Inc. 11644
Introducing: expanded TuffPak line, Reel-A-Pail; Pelican cases, Bucktool; MagLiner carts; Ruxxac carts; flesh tone test chart.

Circle (851) on Free Info Card

NBC News Archives M 6329
Featuring: contemporary, archival footage: personalities, politics, wildlife, scenics from around the world.

Circle (852) on Free Info Card

NDG Phoenix Inc. 10460
Operations management software; library management system.

Circle (853) on Free Info Card

NEC America Inc. S 1756
Video monitors and projection systems.

Circle (854) on Free Info Card

Nelson Baldwin Cases S 4267
Manufacturer of reusable shipping and storage containers for broadcast equipment including EIA rackmount and shock mount shipping containers.

Circle (855) on Free Info Card

Nemal Electronics Inc. 5061
Introducing: subminiature precision video cables; custom patch panels for audio, video.

Circle (856) on Free Info Card

NeTpower Inc. S 2213
Circle (857) on Free Info Card

Neutrik USA, Inc 1321
Introducing: "z" series XLR cable end with pre-tinned contacts; PowerCon AC mains power connector; A/B series IDC panel mount connectors requiring no solder.

Circle (858) on Free Info Card

New England Satellite Systems Inc. S 3175
Introducing: Ku-band satellite vehicle by Frontline Communications; expanded satellite service coverage for northeast and mid-Atlantic region.

Circle (859) on Free Info Card

News Digital Systems S 5520
Setup of digital broadcasting systems.

Circle (860) on Free Info Card

NewsMaker Systems Inc. S 1625
Newsroom automation interface products for titlers.

Circle (861) on Free Info Card

NewTek S 1053, M 6618
Video production graphics, effects system.

Circle (862) on Free Info Card

Niche 10964
Introducing: Sidekick remote control for Pinnacle Alladin, GeniePlus; Jasmine Windows CG application for Alladin, GeniePlus; KCOM-

POSITOR series, linear multilayer keyers; LP1, linear key processor, LK-110 linear keyer, fader, logo inserter; LK-330 linear keyer, fader, key processor; Ruby linear, non-linear editor.

Circle (863) on Free Info Card

Nigel B Furniture S 6028
Featuring: projector stands; monitor cabinets; mixing tables, stands for Mackie, Yamaha systems; non-linear editing edit furniture; ceiling mounts for monitors, speakers; speaker mountings.

Circle (864) on Free Info Card

Nii Norsat International Inc. S 3068
Featuring: multistandard agile modulator for private cable system headends; Windows-based GUI control software.

Circle (865) on Free Info Card

Noise Com S 4270

Circle (866) on Free Info Card

Non-Stop Music Library S 3119
Promotion music industry producing music for television, film and advertising.

Circle (867) on Free Info Card

Norpak Corporation S 6026
Introducing: VBInet internet distribution system; TTX 745 PC peripheral TV data receiver.

Circle (868) on Free Info Card

NORTEL S 1763
Nortel video operations center; DV45 digital video codec, Nortel Video Trunking, Super-trunk.

Circle (869) on Free Info Card

Northern Technologies Inc. 1918
Power conditioning equipment.

Circle (870) on Free Info Card

Nova Systems Inc. 8283
Introducing: new modules for The StudioFrame signal processing system: P1394 Firewire interface; 10-bit median noise reducer, video synchronizer, audio delay/synchronizer, TBC.

Circle (871) on Free Info Card

NS Microwave LA 307, 4544
Continuous rotating pedestal for trucks, ENG towers; offset fed antennas for trucks, ENG towers; camera-mounted microwave systems; ENG microwave truck package.

Circle (872) on Free Info Card

N Systems Inc. 7641
Featuring: Superquad central receive system; Silhouette central receive system, transmit antenna; Stiletto transmit antenna; MC5 touchscreen remote control; CamPac robotic camera system; SuperPod helicopter system.

Circle (873) on Free Info Card

NTL S 3466
Development and implementation of the infrastructure and services for digital broadcasting; joint service platform with Orion for digital distribution to Europe and the United States; News Technology Group, Digi-Media Vision News Digital Systems and News Datacom divisions.

Circle (874) on Free Info Card

NTV International Corporation 34, 8366
Special Technology Exhibition: 720-line progressive scan studio camera; 480-line progressive scan ENG camcorder; video switcher, PDP, MDP.

Circle (875) on Free Info Card

NuComm Inc. 8654
Introducing: TP truck package; T/FR6 Digalog long haul radio, digital ready; CR4 central receiver; MPT1 2/7GHz miniature transmitter; PT/RX5 dual units with single triax interconnect, frequency-agile TX/RX in each band; HTG4 handheld color bar generator NTSC or PAL.

Circle (876) on Free Info Card

Nuko Information Systems I 4541
Products for video networking systems includ-

ing the Highlander MPEG2 encoding system.

Circle (877) on Free Info Card

NVISION Inc. 9681
Introducing: a range of products featuring digital audio routing and interfacing equipment with time code and RS-422 data processing and routing products; 20-bit A/D-D/A converters; synchronous, asynchronous AES, RS-422 dynamic port, digital time code, AES time code routers, modular distribution and synchronization equipment.

Circle (878) on Free Info Card



OConnor Engineering 11044
Camera support equipment including tripods and fluid-head assemblies.

Circle (879) on Free Info Card

Odetics Broadcast 8522
Introducing: facility management system including material, media and resources for enterprise solution to broadcast automation; Spectrum multichannel video management system with cache management interface to HP MediaStream server; SpotBank V7 software for Windows NT 4.0, supports Chinese language playlist, back-up option to archive video server to data tape library.

Circle (880) on Free Info Card

Omicron Video 6746
Introducing: Model 600 video/audio routing switcher; 227 series video DA.

Circle (881) on Free Info Card

OPAMP Labs Inc. 8884
Featuring: amplifiers for audio, video, distribution, mic, EQ, line, VCA, power; routing, matrix switchers; press boxes, audio transformers, oscillators, power supplies; custom sub-systems.

Circle (882) on Free Info Card

OptiBase Inc. S 5826
MPEG-1 encoders, MPEG-2 playback cards for PC under DOS, Windows 3.x or NT, OS/2; MPEG Lab.

Circle (883) on Free Info Card

Optimum Productions 6661
Introducing: Multilingual language dubbing service using Rythmoband technique; video demo available.

Circle (884) on Free Info Card

Options International Inc. 4653
Featuring: Ross CDK-104 telecine switcher, digital keyer; Pandora Lionel safe-area, cursor generator; Cintel TKG Telecine Grey; ASTEC Advanced System for Telecine Edit Control; RTS S35/35 & Pin-Reg combo gate; SADiE TimeSync; CLRVIEW; AccuGlow; high speed 35mm lenses.

Circle (885) on Free Info Card

Optivision Inc. S 1347
High-speed quad multichannel MPEG2 decoder; MPEG2 encoding workstation for realtime encoding and multiplexing; MPEG1 and MPEG2 video transmission systems.

Circle (886) on Free Info Card

Orad Hi-Tec Systems M 8151
Introducing: Cyberset E entry-level virtual set on SGI O2 workstation; additional Cyberset features include virtual actor with motion capture, actors feedback system; Virtual Replay workstation for sports productions; Imagine real-time graphics integration in televised sports events.

Circle (887) on Free Info Card

Orban 2402
Introducing: Optimod-AM 9200 digital audio processor.

Circle (888) on Free Info Card

Orion Atlantic S 3469
International digital video satellite transmission services through London and New York MCPC gateways; SCPC digital video transmission service using Drop & Shoot small ground stations for rapid service start.

Circle (889) on Free Info Card

Ortel Corporation 5143
FiberOptic products for interfacility links.

Circle (890) on Free Info Card

Osicom Technologies Inc. 7424

Circle (891) on Free Info Card

Otari 10580
Introducing: Radar disk recorder; PD-80 disk recorder; TTS postproduction system; DTR-85 DAT recorder; Elite, Status audio consoles.

Circle (892) on Free Info Card

Oxberry S 6038
Animation equipment.

Circle (893) on Free Info Card



Pacific Bell M 8133
Multimedia CD publications.

Circle (894) on Free Info Card

PAG USA 8279

Introducing: System RTI instantaneous battery-status recognition and run-time information in camera viewfinder; 9657 PAG Battery Reader for instant available capacity of digital batteries; PAG Digital Batteries: 9351 System RTI Paglok 2.5 2.5Ah, 9354 System RTI Paglok 5.0 5Ah, 9357 PAG digital SuperPack 5Ah NiCad batteries; MC124 4-channel charger; PP240 battery pack; AR124NP fast charger.

Circle (895) on Free Info Card

PanAm Sat 7980

Featuring: Global satellite program distribution services.

Circle (896) on Free Info Card

Panasonic BTSC 10701

Introducing: AJ-LT75 DVCPRO laptop editor; DVCPRO 200 series AJ-D230V desktop VTR and AJ-D20 1/3-inch 3-CCD camcorder; advanced digital cameras, high definition products; Postbox 3.0 non-linear editing system; Quick Cutter DVCPRO non-linear editing system with 4x transfer VTR.

Circle (897) on Free Info Card

Pandora International Ltd. 4559

Enhanced color processors; telecine control systems; tape-to-tape color processor systems; electronic cursor generators.

Circle (898) on Free Info Card

ParkerVision S 5475

Manufacturer of the CameraMan Camera Product Line.

Circle (899) on Free Info Card

PC Video Conversion M 8044

Scan converters.

Circle (900) on Free Info Card

Peerless 8873

Monitor/TV wall and ceiling mounts; floor stands for TVs and VCRs; speaker stands.

Circle (901) on Free Info Card

Penny & Giles 3424

Introducing: Pythagoras mastering software for Penny & Giles PP-10 audio multiprocessor;

20-bit A/D, D/A converters; frequency selective compression.

Circle (902) on Free Info Card

Penta Laboratories 1720

Featuring: power-tube devices for broadcast.

Circle (903) on Free Info Card

PEP Inc. 7200

Videotape editing products; digital recorder, player card replacement.

Circle (904) on Free Info Card

PESA Switching Systems Inc. 10958

Introducing Ocelot routing switcher products, available in audio/video, analog/digital.

Circle (905) on Free Info Card

Philips Broadcast Television Systems 9901

Introducing: LDK100 dockable 2/3-inch digital camera; LDK1310 DVCPRO digital camera; VS4 video switcher.

Circle (906) on Free Info Card

Philips TV Test Equipment 7643

Featuring: digital sync test generator; color analyzers; modulators, demodulators; waveform monitors, vectorscopes; sync generators.

Circle (907) on Free Info Card

Photron (P.E. Photron) S 1334

Introducing: PSEUDIO virtual set; Primatte for Avid Media Illusion chromakey software; Primatte Pro100 realtime chromakey; Primatte for 3D Studio Max and Photoshop chromakey software.

Circle (908) on Free Info Card

Physical Optics Corporation S 5677

POC manufactures fiber-optic video/audio/data transmission equipment.

Circle (909) on Free Info Card

Pike & Fischer Inc. S 2360

Circle (910) on Free Info Card

Each generation of creative talent insists on pushing the limits...

For the Elite, There is only one Switcher

The ELITE switcher delivers power and speed for the most high intensity creative work and the most demanding compositing jobs, from commercials and promos through to long form program production.



■ When you need speed, you need the real time compositing of the ELITE, able to process up to nine layers of video in a single pass.

■ When you need versatile wipes, complex masks, shadows, outlines and precision key set ups, you need the ELITE Superlayer®, a complete switcher in itself. And for the jobs that go way beyond the ordinary, the ELITE multiplies the power by giving you up to four Superlayers.

■ When clients expect stunning key performance, ELITE delivers the chroma keyers (up to four of them) that are the best in the business, complete with secondary suppression and AlphaMatte™ keying tools.

■ And when complex effects projects call for precision control, there is no more versatile performer than ELITE timelines. Whether you take advantage of the full independent control of each layer, or use the complete ganged control of all nine layers, you will recognise the ELITE as the most finely tuned instrument of its kind.

At these heights of creative capability, it's surprising to discover that the ELITE is also very easy to use. It might also surprise you to know just how affordable it is too.

We made it the one switcher for you. Call your PSP Digital representative now.



PSP Digital Ltd, 6 Votec Centre, Hambridge Lane, Newbury, Berkshire RG14 5TN, United Kingdom.
Telephone: +44 (0)1635 522534 Fax: +44 (0)1635 551995 email: peterj@psp-digital.co.uk http://www.psp-digital.co.uk
U.S. Contact: Avtek Systems, Telephone: 203 250 9223 email: patb@nai.net

Circle (153) on Free Info Card



Pinnacle Systems Inc. 8658
StudioPak for Alladin software adds effects and functions.

Circle (911) on Free Info Card

Pioneer New Media Technologies S 2738
MPEG-2 encoder; digital I.D. hybrid video library system; Video Browse server; CD audio disk changer; commercial insertion system; fast file stills & clips presentation; DVD technology demo; multiscan video cube wall system.

Circle (912) on Free Info Card

Pixel Instruments 6060
New products to be announced; featuring: serial digital synchronizer, proc amp; audio time compressor, expander, pitch shifter; digital audio transcoder; audio delay products; distribution amp for S/P digital video.

Circle (913) on Free Info Card

Pixel Power Ltd. 7983
Manufacturer of open-architecture character generators.

Circle (914) on Free Info Card

Play Inc. S 2819, 8676
Featuring: Trinity video production system.

Circle (915) on Free Info Card

Pluto Technologies Int'l Inc. S 6176
Pluto Technologies is a manufacturer of storage and networking products for the professional post production, film, and TV markets. Pluto's SPACE product line offers a range of full bandwidth, uncompressed, disk-based recorders, that record in 8- or 10 bit, feature high-performance VTR-like capabilities, high reliability RAID protected storage, random access, long recording capacities (8 minutes to 2 hours) and high-quality off-speed playback. Pluto's SPACE, with its traditional video connections and unique interfaces to the computer video world, is the logical bridge between the video world and the resolution-independent computer world. SPACE also offers facility-wide networked storage solutions. New at NAB is Pluto's advanced RAID technology, advanced audio handling, advanced variable speed playback. Pluto will show interconnectivity between SPACE digital

Circle (916) on Free Info Card

Porta-Jib/Hollywood Gen. Machining S 5271
Camera-support products.

Circle (917) on Free Info Card

Potomac Instruments 2017
Featuring: 1900 series directional array antenna monitor; AA-51A audio analyzer; AG-51 audio generator; SD-31/RS-31 frequency synthesizer, coherent detector; FIM-41 MW, FIM-71 VHF, FIM-72 UHF field strength meters; SMR-11 synthesized AM monitor receiver; QA-100 program audio analyzer; 1750-TLM tower light monitor; 1500-PC programmable transmitter controller with DOS compatible software.

Circle (918) on Free Info Card

Power Pixel M 7674
Circle (919) on Free Info Card

Premier Wireless Inc. S 4358
Featuring: BE-450 wireless diversity audio/video system; BE-500 high-power wireless audio/video system.

Circle (920) on Free Info Card

Prime Image Inc. 9285
Introducing: A/V Twister, passes video, stereo audio on single twisted pair to 1 mile; Stereo Twister, passes audio on single twisted pair to 1 mile; Pick-2 combines two Prime Image boards, including audio delay, standards converter, synchronizer/TBC and logo inserter; Time Machine, allows an additional 30 seconds of commercial time during 30-minute program.

Circle (921) on Free Info Card

Pristine Systems S 1935
Introducing: RapidFire digital studio system for radio; integrated package that encompasses scheduling, producing and on-air playback with GUI interface.

Circle (922) on Free Info Card

Pro Battery 8759
Introducing: BP-90 battery charger, weighs two pounds, two simultaneous channels, dual voltage; Featuring: Brick, BP-90, NP1A, NP1B, alkaline, lithium, NiCad batteries; HME products and Smart chargers; IQ TEN BANK charger, programmable portable camera battery test and maintenance system.

Circle (923) on Free Info Card

Pro-Bel Inc. 11501
Introducing: TM64 compact analog and digital router; XD series digital audio/video routers, MADI multiformat audio router; Accent series logo generator, inserter, mixer, conversion products; TX-220 digital master control switcher; Compass, Sextant, Procion automation products; MAPP video server control; Trilogy Mentor SPG, Commander intercoms with Pathfinder, Rapide line control systems.

Circle (924) on Free Info Card

Pro Cyc 11272
Introducing: modular coves, cycloramas and virtual backgrounds with 95-degree corner sections.

Circle (925) on Free Info Card

Prodelin Corp S 3171
Introducing: quick deployable satellite antenna.

Circle (926) on Free Info Card

Production Garden Library 8862
Production music libraries; Tune Ranch library; "In Your Face" tracks; new collection of rock and urban CDs; Manchester music library.

Circle (927) on Free Info Card

Professional Label 6361
Featuring: Label Producer Version 3.16 for Windows; labels for videotape, including custom printing; CD labels, packaging.

Circle (928) on Free Info Card

Professional Sound Corporation 1517
Introducing: new line of VDB carbon fiber lightweight, high-strength boom poles; M8 8-input, 4-output battery operated portable audio mixer.

Circle (929) on Free Info Card

Professional Video Users Worldwide 5258
Formerly MII Users Association of America, representing video equipment users; offers forms for feedback to manufacturers and the television and video production industry.

Circle (930) on Free Info Card

Pro/Four Video Products Inc. S 1161
Circle (931) on Free Info Card

Progressive Networks Inc. I 4055
Circle (932) on Free Info Card

Promax Technology M 8329
Jaz disk arrays for video editing, DTV 2 and 5 GByte; NT disk arrays for video editing, DTV 4 to 54 GByte.

Circle (933) on Free Info Card

ProSource/BMI 11339
Introducing: Shade FX matte box system; Script-boy UHF wireless time-code; distributor for Ikegami cameras, Fujinon, Canon lenses, Sachtler tripods, Arri lighting products.

Circle (934) on Free Info Card

PSP Digital Ltd. S 2447
Elite Production Switchers.

Circle (935) on Free Info Card

Pulizzi Engineering Inc. S 6129
Introducing: IPC 3300 series Intelligent Power Controller provides power control, distribution through push buttons or RS-232/422 computer control; LA 1653 satellite antenna lightning arrester; TPC 12S-A/MTD power controller with ports, Form C dry contact closure ports; TPC 11S-10/MTD power controller; RCP 2242 remote control panel for power controller; TPC 400 low profile 3-phase 30a/phase ac power controller.

Circle (936) on Free Info Card



QSI Systems Inc. 8854
Introducing: 908 logo inserter with TV ratings.

Circle (937) on Free Info Card

Q-TV/OConnor 11044
Introducing: WinCue LT, WinCue PRO computer prompter program; WinCue Net scripting, runorder management program; FDP-11 flat display prompter with ultra brite; FDP-14 flat display panel; QCP Mark 1.5 computer-prompter, QCP Mark II newsroom prompter, QCP-LT prompter software; 9-, 12-, 15-, 17-inch on-camera prompters.

Circle (938) on Free Info Card

Quantel 9931
Introducing: significant enhancements to Paintbox Express and Hal Express graphics systems, Editbox, Henry and Domino visual effects systems and Clipbox, Newsbox, Picturebox and Combo newsroom and transmission systems; Bravo, creative tools to customize and create Paintbox brushes and filters providing paint and texture effects; Here and Now product demos, Above and Beyond R&D demos.

Circle (939) on Free Info Card

Quantum Corporation M 6541
Hard drives and data recording products.

Circle (940) on Free Info Card

Quark Inc. M 7138
Forthcoming internet and multimedia authoring and interactive viewing tool set to be used with QuarkXpress.

Circle (941) on Free Info Card

Quickset International Inc. 6932
Low profile electro mechanical pan/tilt QPT90; miniature electro mechanical pan/tilt QPT15; Jupiter fluid head and tripod system.

Circle (942) on Free Info Card

QuVis Inc. 9564
Introducing the QuBit digital video recorder. It can act as a post-production edit VTR, a single-frame controller/recorder and digital video data server.

Circle (943) on Free Info Card

QVIS Corporation S 5672
Circle (944) on Free Info Card



Radamec Broadcast Systems 9376
Introducing: Virtual Scenario studio system, a cost effective alternative to enhance program formats with VR studio sets, background imag-

es can be video, stills or computer generated.

Circle (945) on Free Info Card

Radyne Corporation S 2279

Featuring: satellite hardware and electronics; standards conversion equipment.

Circle (946) on Free Info Card

Raytheon Semiconductor S 2353

Featuring: digital video decoders; VGA to video encoder; settop video encoder.

Circle (947) on Free Info Card

RCI Systems Inc. S 6136

Introducing: custom wiring systems snakes, fans and stage boxes; Broadcast Media multi boxes, VMAV A/V multi box; RL2 rack light; CT-2 cable tester; 440 pro adapter and floor boxes; custom A/V control wall plates, map panels, rack panels, truck panels, accessories; custom engraving, silk screening.

Circle (948) on Free Info Card

R-Columbia Products 6745

Introducing: PalmTalker hands-free, VOX-less wireless intercom headphones; Expand-A-Com wired intercom system, expands from 4 to 400 stations.

Circle (949) on Free Info Card

RDL (Radio Design Labs) 3724

Introducing: additions to Stick-On products, ST-LMX3 mic/line mixer; ST-PD5 power supply distribution module; STR-19A, -19B racking systems; EMC products, TS-1D transient suppressor with GB6 mounting, grounding bar.

Circle (950) on Free Info Card

RE America Inc. S 4068

Introducing: MPEG-2 video codec supporting 4:2:2 and 4:2:0 coding; RE660 series MPEG layer II audio codecs, linear PCM RE8930 audio, data, video codec; RE3400/4500 ETSI/ANSI component, RE8860/8870 composite video codecs.

Circle (951) on Free Info Card

Rean Products S 1062

Featuring: audio patch bays.

Circle (952) on Free Info Card

Rees Associates Inc. 10458

Facility design and planning for broadcasting and production facilities.

Circle (953) on Free Info Card

RF Plante Ind. Com. Ltd. 3527

AM, FM transmitter systems.

Circle (954) on Free Info Card

RF Technology Inc. 11910

Featuring: 1.2-16GHz microwave systems, UCL analog/digital portable, ACL analog/digital fixed, UPL ultra portable; Pylon series central receive systems; SNG-T C, X, Ku, Ka flyaway systems in single, dual, tri-band packages; SVX-T C, X, Ku, Ka band digital upconverters; DST-140 Ku band 1m antenna with Intelsat/Eutelsat derived feed.

Circle (955) on Free Info Card

RGB Spectrum M 7438

Featuring: RGB/Videolink, SuperView, SynchroMaster.

Circle (956) on Free Info Card

Richardson Electronics Ltd. 7107

Power transmitting tubes, UHF power devices, power tetrodes.

Circle (957) on Free Info Card

The Rip-Tie Company S 2446

Introducing: Rip-Tie LITE series, Cable Strap 10-pack; Cable Strap screw-mount 10-pack; Wrap Strap in 10-foot roll.

Circle (958) on Free Info Card

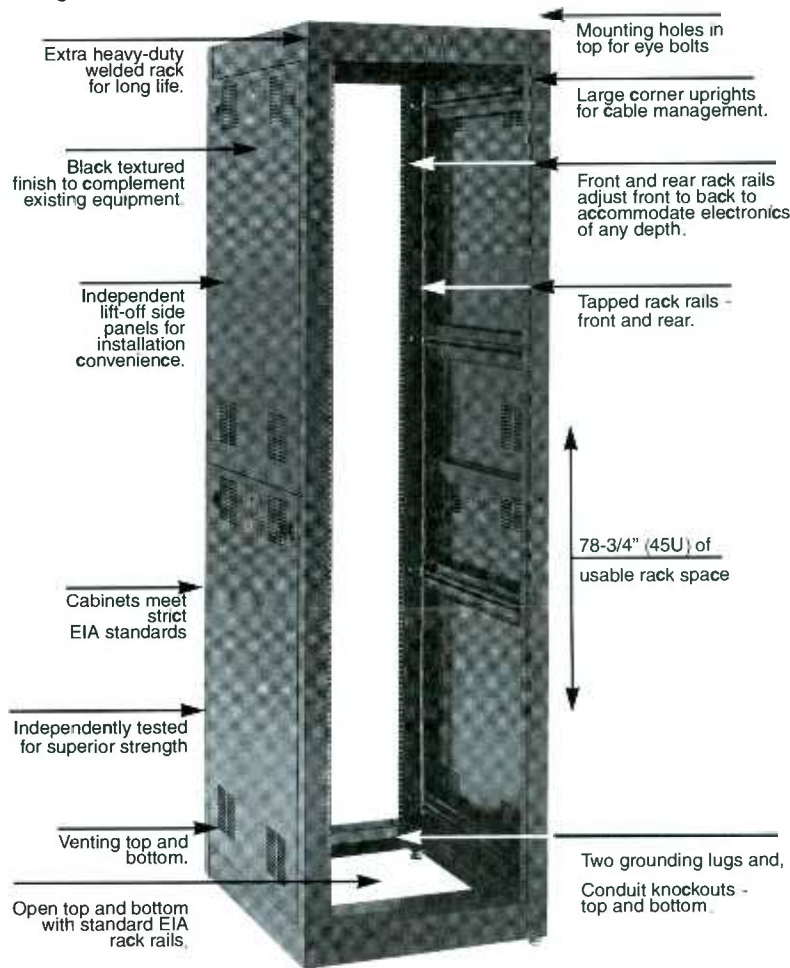
Rohn 11037

Featuring: guyed towers, self-supporting towers; lighting equipment; safety devices.

Circle (959) on Free Info Card

14 WAYS TO BEAT RACK BOREDOM

Rack buyers who are bored with the same old specs are finding NEW and exciting features to think about when considering Winsted's New VRx series.



These new equipment racks improve on long-standing industry standards, and are built to last a lifetime. Call a Winsted design engineer at 800-447-2257 for a free consultation or...

**FOR A FREE CATALOG CALL OR WRITE
1-800-559-6691**



10901 Hampshire Ave. So., Minneapolis, MN 55438-2385
Fax: 612-944-1546 • Web site: www.winsted.com • email: racks@winsted.com

Preferred by Professionals Worldwide™

Circle (154) on Free Info Card



Roland Corporation 3612
Audio workstations; audio announcement recorder; anti-feedback processor; 3-D sound processor.

Circle (960) on Free Info Card

Rorke Data Inc. 6232
Introducing: StudioNet; ultra SCSI and fibre-channel RAID; Fibre-channel network switchers, hubs; MaxArray Ultra.

Circle (961) on Free Info Card

Rosco Labs 5745
Introducing: Horizon PC-based lighting control console operating under Windows 97; IPS rack chokeless IGBT-based dimmer rack system; VISTA touchscreen LCD architectural lighting control system.

Circle (962) on Free Info Card

Ross Video Ltd. 8354
Introducing: CDK 104 telecine switcher; CDK 101 component digital keyer; DAC-8015 4:2:2 to NTSC/PAL enhanced encoder.

Circle (963) on Free Info Card

RTI-Research Technology International 7345
Pro Line videotape evaluators, recyclers for Betacam SP, Digital Betacam, D3, MII, U-Matic, S-VHS cassettes and instrumentation or data tape systems; magnetic media degaussers.

Circle (964) on Free Info Card

RT-SET 11501
Introducing: Larus, Otus turnkey 3-D virtual studio systems, enabling real-time 3-D sets and environments to be used in live and taped broadcast and CATV, post-production, interactive programming, content-intensive video production.

Circle (965) on Free Info Card

Rules Service Company 4956
FCC rules, regulations published monthly in loose-leaf and computer formats; copyright, patent, trademark rules.

Circle (966) on Free Info Card

Russ Bassett S 2056
Introducing: Gemtrac ultrahigh density tape storage system.

Circle (967) on Free Info Card

Rycote Microphone Windshields Ltd. 3726
Featuring: wind attenuation and positive microphone support and isolation from movement and vibration, integrated system includes Windshield, Suspension, Hi Wind Cover and Windjammer; Rycote Softies slip-on cover with integral synthetic fur exterior and robust shock-mount; Mono Extended Ball Gag for Neumann KM100, Schoeps CCM series microphones; Camera Mount Softie for Sony DVW700.

Circle (968) on Free Info Card



Sachtler Corporation of America 9231
Introducing: Video 60 OB/studio video fluid head with 9-step drag control; Studio 9+9.35mm film fluid head with 9-step drag control; Panorama Plus 16mm film head using Plus Tech-

nology; Director Compact series Fresnel, 1kW and 2kW in compact size; Director 1.2, 2.5, 4K Fresnel HMI lights.

Circle (969) on Free Info Card

SADiE Inc. 1001
Octavia modular digital editor; SADiE mobile field recorder; Sascia ATM networking; SADiE 3 workstation software; Timesynch software for syncing dailies; SADiE portable digital editor.

Circle (970) on Free Info Card

Sandar Electronics 11864
Video routers; audio routers; 16x16 and 32x32 140 and 270Mb/s routers; systems to 300MHz bandwidth; audio conference system; software for PC router control.

Circle (971) on Free Info Card

Sanders Media Adventures Inc. S 7672
Active video filters for multi-channel set-top and workstations; expanded line of NTSC/PAL CCIR 601, broadcast and low-cost filters; also Y, C, Y/C and composite outputs some for channel 3/4 RF modules in VTRs.

Circle (972) on Free Info Card



Satellite Communications Magazine 5444, S 1760

Circle (973) on Free Info Card

Satellite Export & Engineering (Patriot) LA 103
Introducing: commercial antenna systems for broadcast, cable, MMDS with sizes from 1.2m to 4.5m; offset antenna systems for broadcast, educational and multilevel networks.

Circle (974) on Free Info Card

Scala Electronic Corporation 9053
Featuring: Flexible coaxial cable, coaxial connectors; low power FM broadcast antennas.

Circle (975) on Free Info Card

Scala Inc. I 4949
Introducing: Scala Infochannel IC200.

Circle (976) on Free Info Card

ScheduAll by VisuAll Inc. S 1517
Introducing: ScheduALL complete computerized facility management system for Windows 95 and NT; scheduling modules for facility areas, equipment/personnel, project management, library/labeling, invoicing/accounts receivable, production reports, bidding.

Circle (977) on Free Info Card

Schneider Optics 11177
Manufacturer of photographic filters for motion picture, broadcast video and still photography.

Circle (978) on Free Info Card

Schoeps/Post Recordings 4842
Schoeps condenser microphones and accessories.

Circle (979) on Free Info Card

Scientific-Atlanta Inc. 6713
Satellite communications equipment, earth station antennas, video receivers, antenna controllers; MPEG-based digital video compression system.

Circle (980) on Free Info Card

Scitex Digital Video 10714
Introducing: Network Group concept, a collaborative workgroup post-production environment, including Abekas studio products and sphere non-linear editing workstations, Serial Storage Architecture SSA-based network for faster than real-time media sharing; Sphere DveousFX integrates leading DVE technology through Sphere family of non-linear editing editing systems, realtime, zero-rendering 3D DVE; SphereOUS 1.3 with core feature set for Sphere family; Abekas Texus CG Texus Ver 3

with support for Han language (Chinese, Japanese, Korean); Abekas 8150, Dveous latest versions of 8150 digital production switcher with Dveous option and stand-alone Dveous and Brutus DVE systems.

Circle (981) on Free Info Card

Screen Actors Guild M 6969
Representatives of professional performers.

Circle (982) on Free Info Card

Seachange International S 5463
Video servers and integrated systems for broadcast automation and digital insertion.

Circle (983) on Free Info Card

Selco Products Company 1922
Equipment replacement components, introducing: locking knobs, Soft Touch slider knobs and 3-shot push-on knobs.

Circle (984) on Free Info Card

Sencore 11976
Sencore SV953 MPEG-2 stream station provides complete test solution and analysis for MPEG-2 digital video broadcast signals; AAVS DVA 320QC digital video quality control analyzer tests component and composite serial digital video in 525- and 625-line formats for serial jitter, EDH errors, gamut levels, signal amplitude, parity errors, bit activity reserved code error, TRS error, non-recommended value errors.

Circle (985) on Free Info Card

Sennheiser Electronic Corporation 6760
Introducing: MD425 supercardioid dynamic mic; EM3031-U single channel UHF true diversity receiver; EM3032-U 2-channel UHF true diversity receiver; SKM3072 UHF handheld transmitter, 16 switchable frequencies, 50mW output power; HDC25 active noise cancellation headphones; HMD25 active noise cancellation headphones with dynamic mic.

Circle (986) on Free Info Card

Shively Labs 3301
Introducing: high-power UHF; FM antennas in side-mount, panel designs; patch panels; low-power UHF, MMDS antennas; filters, combiners, compressor-dehydrators; FM, UHF translators; omni and directional pattern studies.

Circle (987) on Free Info Card

Shook Electronic USA Inc. LA 101
Introducing: A-51T dual EXP 51-foot dual expandable Digital Production trailer; A-11 ENG van with special microwave system.

Circle (988) on Free Info Card

Shure Brothers 5613
SCM 810 automatic mixer; SCM 800 manual mixer; LX wireless microphone systems; Beta series wired microphones.

Circle (989) on Free Info Card

Sierra Automated Systems & Eng. Corp. 4027
Introducing: GPI-1600 PC automation package; GPI-1600 SI salvo switching; SlimLine console mount controllers; 16000 series 32x32, 64000 series 256x256 audio routers; 32000 series 128x128 audio router with full summing; 32000 series mix-minus, IFB systems; MMMS 3200 mix-minus, surround mixing system.

Circle (990) on Free Info Card

SierraCom LA 204
Introducing: fully automated VPS; SNG antenna pointing system.

Circle (991) on Free Info Card

Sierra Design Labs S 4814
Introducing: Transcoder 4:4:4 color space converter, up/down samples works internally at 13-bit resolution for a 10-bit data path; NF-Sserver with ATM modular video server using QuickFrame DDR concept for speed, functionality in large area ATM networks; Quickframe 60, Quickframe 120 60- and 120-minute digital disk recorder products configured for 4:2:2; 4:4:4:4:4 operation, RS-422 compatible VTR control; non-linear playback; 525/625-frame formats, Ethernet with TCP/IP, RSH, RCP support, multifunction SCSI port.

Circle (992) on Free Info Card

Video Security In the Palm of Your Hand



Your TV news crew has pulled off a major coup—a scoop for the five o'clock news. And your cross-town rivals don't have a clue you're about to one-up them.

To ensure exclusive bragging rights to your story, get the Macrovision VES-TM "Minicrypt"—the hand-held, DC-powered video/audio encryption system you can take anywhere your news crew ventures. Your guarantee that live feeds between the ENG van and the station won't be intercepted.

The VES-TM Minicrypt is packaged in a compact, ruggedized enclosure that's

extremely portable. A CoDec configuration and standard camera/microphone/transmitter interfaces make for easy set-up and operation. And support for all 525 and 625 line video formats is standard. All of which adds up to a full featured and affordable encryption alternative for a wide variety of remote applications.

Keep a firm grip on your scoop du jour. Check out the entire line of Macrovision video/audio encryption systems. In the

U.S., call 1 408-743-8600, fax 1 408-743-8622 or visit our website at www.macrovision.com.

MACROVISION®
Protecting your image

See us at NAB Booth #4957

Macrovision is a registered trademark and VES-TM is a trademark of Macrovision Corporation.

Circle (141) on Free Info Card
www.americanradiohistory.com



Sierra Video Systems Inc. 7437

Introducing: DigiLinx series modular terminal equipment for digital, mixed digital/analog systems; Model 6464 mid-size serial digital router; Model 256D/E large 256x256 serial digital router; router control panels; dedicated hardware control panel for Mirage digital compositing engine.

Circle (993) on Free Info Card

Sigma Electronics Inc. 9883

Switching, processing, distribution for multi-format systems; serial digital video switcher; control router (RS-422).

Circle (994) on Free Info Card

Sigma Trimm 5769

Circle (995) on Free Info Card

Silicon Graphics 4826

Graphics supercomputer platforms; on-line support, training, industry information service; network servers.

Circle (996) on Free Info Card

Silicon Graphics World 8167

Circle (997) on Free Info Card

Sira Sistemi Radio 9053

Antennas and accessories for TV and FM broadcasting.

Circle (998) on Free Info Card

Skotel Corporation 11425

Accessories for field production including "Little Red" a linear time code reader to RS-232 converter.

Circle (999) on Free Info Card

SMPE 5516

Professional organization, featuring various publications, standards, recommended practices engineering guidelines; New Film Conference exhibit; website directory.

Circle (1000) on Free Info Card

Snell & Wilcox 9470

Introducing: new models in standards conversion and MPEG product lines.

Circle (1001) on Free Info Card

Softel Ltd. 4672

Products for digital distribution of data, audio and video.

Circle (1002) on Free Info Card

Softimage/Microsoft 6054

High-performance computer graphics software.

Circle (1003) on Free Info Card

SoftTouch Inc. 4072

Test tape; closed-caption display and recovery product, closed-caption encoder.

Circle (1004) on Free Info Card

Solid State Logic 2612

Introducing: AltMix post-production system complementing Axiom and Aysis digital console systems; uses DiskTrack to store video and audio in shared hardware environment; advanced editing tools; dynamic links to console automation data; numerous advanced features; Featuring: Aysis, Axiom systems.

Circle (1005) on Free Info Card

Solutions Custom Furnishings 5658

Featuring: DUO ergonomic desk and monitor bridge, ready-to-assemble furniture systems fit in corner; Crescent modular desks, monitor

bridges, undercounter racks; Arc modular desk, 3-monitor bridge, undercounter rack; Custom free consultation on custom consoles and technical casework.

Circle (1006) on Free Info Card

Sonic Solutions 4132

Introducing: Sonic Studio digital audio workstation with enhancements in CD premastering, radio broadcast, audio postproduction and DVD premastering, 24-bit 96kHz high-density audio, Open Music System support, support for Sony PCM 9000 master disc recorder; featuring DVD Creator premaster system for DVD format.

Circle (1007) on Free Info Card

Sonifex 1933

Circle (1008) on Free Info Card

Sony Electronics Inc. 5929

DVW-250 portable VTR; BVP-500 studio, BVP-550 portable cameras; DLE-100 clipper; DNE-300 non-linear news editor; BZA-8100 transmission management software; LMS cache; DME-7000 multichannel digital multi effects; DMK-7000 stand-alone multichannel digital DSK; FXE-120 effects editing system; UVW-100BL Betacam SP camcorder; DXC-3727B 3-chip dockable camera system; UVW-100B 3-chip camcorder; BVM-14E1E 14-inch evergreen display evaluation monitor; BVM-14E5U 14-inch evergreen stand-alone evaluation monitor; DSC-1024 digital scan converter; SMS-10P monitor speaker with integral amplifier. DARS-MP metal particle audio tape for DTRS format.

Circle (1009) on Free Info Card



Sound Ideas 7338, 5859

Introducing: Series 6000 Extension sound effects library; Turner Broadcast music library.

Circle (1010) on Free Info Card

Soundscape Digital Technology 7666

Hard disk recording systems with all standard DAW functions.

Circle (1011) on Free Info Card

Soundtracs USA Inc. 5763

Introducing: Virtua digital mixing console, 64 inputs to mixdown; 48 full inputs with 4-band EQ, dynamics, aux sends, group, master outputs, 16 return inputs; Jade S 24 bus automated production console, moving fader automation LCRS panning, 24 group in-line format assignable dynamics processor, EQ.

Circle (1012) on Free Info Card

Southern California Leasing 7379

Circle (1013) on Free Info Card

Speaker Array Logic 4276

Expanding circular wave studio monitor system incorporating a specially designed FIR digital filter.

Circle (1014) on Free Info Card

Specialized Products Company 13654

Tools and toolkits for industry technicians.

Circle (1015) on Free Info Card

Specular 6844

Desktop graphics software.

Circle (1016) on Free Info Card

Speer Communications 8067

Circle (1017) on Free Info Card

Spotmagic Inc. 6166

Circle (1018) on Free Info Card

Sprague Magnetics 1822

Tape head, DAT head reconditioning; hard, floppy and optical drive repairs; computer/audio DAT drive repair; computer and audio accessories.

Circle (1019) on Free Info Card

Sprint 7451

Featuring: telecommunications services, internet services.

Circle (1020) on Free Info Card

Sprocket Digital 6860

Introductions: RG177D digital reticle safe area generator; RF177A analog reticle generator; PB540A VTR audio interface/router; upgrade for Cintel MkIII, URSA telecines; digital serial video transceivers; THX system consultation, integration, certification; time code products.

Circle (1021) on Free Info Card

SSE Telecom 7747

Introducing: satellite modems, transceivers and converters; complete earth stations, flyaway and transportable; microwave modems.

Circle (1022) on Free Info Card

Staco Energy Products Company 11486

Introducing: SVR Stepper Voltage Regulators in 19-inch rack, floor mount enclosures with single-phase ratings to 15kVA, full range correction in less than one sec; UPS True-On-Line to 10kVA single-phase, 12-150kVA three-phase; AVR/MVR voltage regulators; PLC/MC power conditioners.

Circle (1023) on Free Info Card

Stainless Inc. 6811

Complete tower design, fabrication, erection, modification and maintenance; inspections and structural analysis of existing towers, full service field operations for antenna installations, repairs, regular tower maintenance.

Circle (1024) on Free Info Card

Standard Communication Corporation 10180

Control access module, complete on-site, off-site control of all satellite receiver functions; international satellite receiver; SMATV/CATV, special network receiver; VSB AM TV modulator.

Circle (1025) on Free Info Card

Stanton Video Services Inc. 11173

Camera support products including Jimmy Jib III and accessories.

Circle (1026) on Free Info Card

Steenbeck Inc. 5525

Featuring: film cleaner; film editing tables; film-to-video transfer systems; full line of Steenbeck products.

Circle (1027) on Free Info Card

STE-MAN Inc. 1220, 8279

Distributor: PAG batteries.

Circle (1028) on Free Info Card

Storage Computer Corporation 7369

Circle (1029) on Free Info Card

Storage Concepts Inc. 1225

Introducing: FibreRAID system for uncompressed and multiple stream video storage using fiber channel connectivity for 100Mbyte/s continuous data transfer, operating on SGI Impact, 02, Onyx, Challenge series platforms and PCI/NT; VideoStar MPEG2 compression video-on-demand server supports eight to 320 users with interactive operation; VideoPLEX; Concept 910; Concept 812; D+E RAID.

Circle (1030) on Free Info Card

Storeel Corporation 8837

Room Stretcher tape storage for maximum density storage for small formats; Rail Rider provides single-entry access in narrow depths; Stor-Max for double-entry access in lengths 3-18' without raised flooring or motors.

Circle (1031) on Free Info Card



**"In many cases
CAMPLEX has
saved us and
given us an
advantage over
our competition.
We're very
pleased with the
units and highly
endorse them."**

Jim Biggers

Cary Martin, ACE
WJXT-TV in Jacksonville, FL

"the Camplex units
are so successful in both
QUALITY of picture and
EASE of set up that using
Camplex in our SNG
truck became more of a
necessity than a luxury."

Jim Biggers, CE
WJXT-TV in Jacksonville, FL

In the Studio --

"with CAMPLEX on our
fourth camera, which is hand-
held, we can roam around at fan
shows, telethons and things like
that. A great system -- gives you
iris controls, communications
and systems gains control --
works out very well for us."

From our SNG Truck --

"get on location, drop 1,000
feet or so of cable, put a camera
at the end and have full
communications, intercom, IFB,
Microphones and all."

After the game --

"you can't get into the locker
room until the end of the game
-- prewired as far as the stadium
goes - you have to come in from
the wall out - you come in with
the camera all set, drop your
wire, plug into the wall and turn
on power, you're ready to go."

CAMPLEX USERS SINCE 1994

CAMPLEX multiplexes via
one coax cable these signals
required for live, remote
ENG/EPF/SNG productions:

- Composite Camera Video
- Aux. Audio/IFB
- Camera Signal Timing
- Serial Data
- Two Channel Mic. or Line Audio
- Genlock
- Return Video
- Tally / Call
- Two-Way Intercom
- PLUS -- Power!

NAB97

Visit us at booth # 10984
LVCC MAIN HALL

Camplex / Concept W Corporation
3302 W. 6th Ave.
Emporia, KS 66801 U.S.A.
Phone 316-342-7743
Fax 316-342-7405
www.camplex.com

© 1997
Camplex and Plus Port are registered trademarks of
Camplex / Concept W Corporation.
DNR® is a registered trademark of National
Semiconductor Corporation.
SONY® is a registered trademark of Sony Corporation.

CE



CAMPLEX®

Circle (142) on Free Info Card

www.americanradiohistory.com



Strand Lighting Inc. 6147

Lighting fixtures, control products.
Circle (1032) on Free Info Card

Strata Inc. M 8119

Strata Media Paint, Fractal paint, 3-D graphics software for Mac and NT systems.
Circle (1033) on Free Info Card

StreamLogic S 3314

Circle (1034) on Free Info Card

Studer Professional Audio Inc. 6948

24-bit MO-recorder.
Circle (1035) on Free Info Card

Studio Technologies Inc. 2104

Introducing Model 770 audiomixer/IFB; Model 750 audiomixer; IFB Plus series mobile talent cueing systems; StudioComm series central controllers, control consoles and accessories; StudioTools series distribution amplifiers.
Circle (1036) on Free Info Card

Sumitomo Electric USA Inc. S 2361

Multichannel video displays.
Circle (1037) on Free Info Card

Sundance Digital S 1228

Introducing: Station Master station automation system; FastBreak Version 1.2 turns ASC Virtual Recorder, Tek Profile or Drastic VVCR into a commercial insertion system; TimeLiner Windows-based automation system for broadcast, cable and corporate environments controls 8 serial sources, 16 GPIs, 16x2 router and uses up to four independent playlists; Sundance System Version 2.5 linear editing system for 15 machines, switcher and 8 GPIs.
Circle (1038) on Free Info Card

Sun Microsystems I 5439

Introducing: Sun MediaCenter video server, Ultra servers, Render Farm.
Circle (1039) on Free Info Card

Superior Electric 1626

Introducing: STABILINE WHR11NSD11R5U rack-mount automatic voltage regulator; Featuring: power protection equipment; UPSs, power conditioners, transient suppressors, RFI filters; AC disturbance monitors.
Circle (1040) on Free Info Card

Superscope Tech/Marantz 2102

CDR620 compact disc recorder; IS5022, IS5021 digital sound processors; VPS 200 video presentation system; PMD 350 combination CD player/tape deck; portable audio presentation products.
Circle (1041) on Free Info Card

Sure Shot Transmissions Inc. 11336

Circle (1042) on Free Info Card

Svetlana Electron Devices 1424

Introducing: 3CX6000A7/YU148 power triode; Russian-made devices are full power tested at factory before shipping.
Circle (1043) on Free Info Card

SVS, Inc. S 6141

Featuring: motorized scissor lifts, carts with motorized platforms.
Circle (1044) on Free Info Card

Switchcraft Inc., a Raytheon Company 2924

Audio connectors, jacks, plugs, audio and video patch panels, patch cords, molded cable assemblies, audio accessories, switches, jackfields,

jack panels, power cords and EAC power receptacles.

Circle (1045) on Free Info Card

Systems With Reliability (SWR Inc.) 5609

Introducing: FMU FM antenna, ultrapower antenna rated 50kW; Rigid RF Component catalog.
Circle (1046) on Free Info Card

Symetrix Inc. 1817

Introducing: Model 628 digital voice processor premium quality mic preamp, de-esser, downward expander, compressor and 3-band parametric equalizer with analog and digital outputs, 128 processing presets, wired remote control; Model 532E 1/3-octave graphic equalizer for 31-band control, high-pass and low-pass filters, dynamic range greater than 112dB.
Circle (1047) on Free Info Card

Synergistic Technologies S 2556

Circle (1048) on Free Info Card

Synthesys Research Inc. S 6134

Introducing: enhanced features for DVA184 serial digital video analyzer, testing 525-, 625-line component digital video at 270MHz and 360MHz rates; touch-screen operation selects eye diagram, auto jitter measurement, jitter FFT, 8 format checks, EDH testing, component waveform, histogram, more; embedded audio features.
Circle (1049) on Free Info Card

SyQuest Technology Inc. M 7163

Data storage products for the computer and video industries.
Circle (1050) on Free Info Card

Systems Wireless, Ltd. 11259

Introducing: UHF frequency agile products, including UDR200B wireless mic receiver, UM200B wireless beltback transmitter, UT200 handheld transmitter.
Circle (1051) on Free Info Card



TAI AUDIO Inc. S 6033

Rental, sales and service of audio for film, video, television, studio, broadcast and live sound, wired and wireless mics, walkie talkies, wired and wireless intercoms, IFB, analog and digital recorders, cart machines, mixers, boom-poles, playback systems, telephone interfaces, adapters, cables, cases, connectors, portable DAs, portable sound booths, tape, batteries and expendables.
Circle (1052) on Free Info Card

Tamrac Inc. S 5766

Circle (1053) on Free Info Card

Tamuz Dongseo Electronics 2426

Featuring: portable audio mixer; audio DAs; AV routers; A/V color LCD monitor; audio monitor; tally control; coordination switcher; TVR remote control.
Circle (1054) on Free Info Card

TASCAM 6952

Introducing: Tascam Digital mixer; featuring, audio consoles, multitrack and DAT recorders.
Circle (1055) on Free Info Card

Taurus Communications, Inc. 11185, S 2860

Full service telecommunications services.
Circle (1056) on Free Info Card



TCI (Theatre Crafts International) Magazine
5444, S 1760

Circle (1057) on Free Info Card

TDC Inc. (formerly Tally Display Corp.) 8679

Introducing: Tally Back gives tally to camera assigned to a router; large-scale signs displaying news headlines, scores, super-titles, etc.; BCD encoders to access up to 32 prestored messages on a display.
Circle (1058) on Free Info Card

Techexport Inc. M 7274

Introducing: CFE Gallea 32-bit videographics engine, capable of uncompressed captures on single PCI card; Grappo TNT TV machine sequencing for commercial insertion system.
Circle (1059) on Free Info Card

Techflex Inc. 11160

Featuring: FLEXO expandable sleeving for protection of A/V cable, wire, harnesses.
Circle (1060) on Free Info Card

Technical Film Systems Inc. S 4879

Circle (1061) on Free Info Card

Techni-Tool 11337

Source for Tektronix, Fluke products; also fiber optics, field service, rework, connect, interconnect equipment; service chemicals, service control.
Circle (1062) on Free Info Card

Technosystem S.P.A. 3127

Mod TTU44-UC 40kW IOT, Mod STU-35 5kW UHF, Mod STV-41 10kW VHF TV solid-state transmitter.
Circle (1063) on Free Info Card

TecNec (Technical Necessities) 5158

Introducing: VB-4X4V14x4 A/V matrix switch; Dupe 6, Dupe 20, Dupe 100, 6- 20-, 100-unit video duplicator systems; miniature camera cables; full line of Kramer equipment.
Circle (1064) on Free Info Card

Tekniche Ltd. 8817

Introducing: IXION standards converter; TACS technical assessment and control system network management; Genesis Digital Interface products; 6047/6048/6049 series 4:1 audio compression products; 6055E/6056E AES multiplexers/demultiplexers; 6059T dual stereo channel tracking audio delay; 6069 rack controller card; DX210/DX120 format translators; HiRes 1440 H/V aperture correction functions for TK1440.
Circle (1065) on Free Info Card

Tekskil Industries Inc. 11164

Introducing: Genesis 12-inch computer prompter; Companion 9-inch portable prompter; lightweight gas plasma ENG prompter.
Circle (1066) on Free Info Card

Tektronix Inc. 9914

Introducing: WFM601A monitor for component signal levels and timing; WFM601E for transmission path analysis; TEK 764 SDV option adds embedded audio demultiplexing to digital audio monitor; MTS100 MPEG protocol test set in rack-mount version; Profile PDR 2000 professional disk recorder storage products; M-2100 digital master control system; Tektronix TekCare Services; Technology demonstrations of JND Just Noticeable Difference picture quality algorithm; MPEG real-time analysis. Also introducing NewStar for Windows, NewStar Web Publisher, EditStor, CCAapture, NewStar LAN browser.
Circle (1067) on Free Info Card

Telecast Fiber Systems Inc. 9281

Introducing: Cobra fiber-optic triax camera interface for Sony wideband and Philips cameras; featuring Adder audio digital multiplexer with multidrop audio network; Viper V/A/intercom/data system for OB, fixed applications; Sidewinder snake for OB, ENG.
Circle (1068) on Free Info Card

Telnet S 2356, M 7342

Introducing: fully programmable controllers; digital 16x16 video routers; digital, expandable 8x8 video routers; 400MGHZ video quad DA.
Circle (1069) on Free Info Card

Telemetrics Inc. 11646

Introducing: interactive TV control receivers CR-ITV, interactive TV control panels CP-ITV; TM-9660 triax camera-control system; TRO-MO-P motorized camera trolley with presets.

Circle (1070) on Free Info Card

Telepak San Diego 5532

Featuring: Telepak soft cases of durable, water and stain-repellent nylon pakcloth with resilient high-density padding shock absorbancy; designs to custom fit equipment.

Circle (1071) on Free Info Card

Telescript Inc. 8944

Monitor prompting systems with 9-17" monitors, flat-panel display with mounting systems for camera or public speaking; PC desktop, laptop and stand-alone or remote; closed captioning systems.

Circle (1072) on Free Info Card

Television Engineering Corporation LA 301, 5628

Introducing: TEC-19 Micro-Sat; TEC-Eagle Eye camera system; TEC-IFB controller.

Circle (1073) on Free Info Card

Television Equipment Association 7215

Featuring: Matthey Electronics 3000 series digital interface systems; NTSC/PAL encoders, decoders; 10-bit A/D, D/A converters; monitoring D/A converter; SDV fiber optic, coax transmit/receive unit in 1RU; 6 cards with power supply in 1 RU package.

Circle (1074) on Free Info Card

Telex Communications Inc. 8510

Featuring: digital-to-analog system; Audiocon US-2000A user station; Audio ES-4000A expansion station; LCP-100 level control panels for ADAM intercom matrix; UHF wireless intercom; Windows NT/95 keypad for Matrix intercom; ProStar UHF wireless, ProStar VHF wireless mic systems; HT-series mic with Audix heads; TD series vocal mics; Cohalt series instrument mics.

Circle (1075) on Free Info Card

Telos Systems I 5250, 3006

Introducing: Zephyr Express, audioactive internet audio.

Circle (1076) on Free Info Card

Tel-Test Inc. 5622

Automation products, master control switchers; air channel control automation.

Circle (1077) on Free Info Card

Tentel Corporation 5511

Introducing: TSH-B8 Betacam SP digital reference plane gauge; TMS-1 35x video head microscope; digital video head protrusion gauge accurate to 1 micron.

Circle (1078) on Free Info Card

TERACOM Components 1324

Introducing: DTTV combiner for UHF transmission systems.

Circle (1079) on Free Info Card

TFT Inc. 3003

EAS 911 emergency alert system encoder/decoder with 2 audio inputs, RS-232 digital I/O; EAS 941 remote control/status board for multiple studio control of EAS911; EAS 940 program/transmitter interrupt unit; EAS 930 multi-module receiver with chassis, power supply AM/FM/7-channel NOAA weather radio receiver modules; Model 8900 Reciter STL receiver exciter.

Circle (1080) on Free Info Card

Theatre Service & Supply 6747

Introducing: compact lighting dimmer with four dimmers rated 600W or one dimmer at 2.4kW, operates using standard DMX-512 control signal; special velour fabrics for studio cyclorama curtains with special treatment for areas experiencing high humidity.

Circle (1081) on Free Info Card



!!! the possibilities are endless

State-of-the-art character generator,
still store, paint and animation system designed
to address the needs of advanced users.

- real time rendering
- feature packed
- instant composition
- ease of operation
- dependable



Collage — offering the fastest on line,
on-air graphics system today!

MAJOR Technologies Inc.

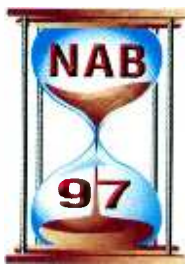
232 Britannia Road E, Mississauga, ON L4Z 1S6

Call 1-800-4E1-7814 for the location
of your nearest representative.

See us at NAB '97, booth 7983
in the Las Vegas Convention Centre.

Manufactured by Pixel Power, Cambridge, U.K., Tel: 011-44-1223-423-399

Circle (155) on Free Info Card



Thermodyne International Ltd. 5619
Featuring: reuseable shipping, storage and carrying cases for video, computer equipment; Shok Stop, Rack Pack, Quadraflex and Slim-Line light weight, durable cases in 320 off-the-shelf sizes.

Circle (1082) on Free Info Card

The Shotmaker Company S 1770
Camera support equipment, camera dollies, remote head crane, mini crane; portable motion control system.

Circle (1083) on Free Info Card

THOMCAST 7414
Introducing: Digital Advantage TV transmitter; IOX transmitter, solid-state VHF transmitter; Crystal VHF B III and L-band DAB transmitter; Skywave 2000 AM digital radio broadcasting; S7HP high power AM transmitter; MMDS transmission products.

Circle (1084) on Free Info Card

Thomcast Inc. 7414
Circle (1085) on Free Info Card

Thomson Broadcast Inc. 7414
Introducing: 12-bit digital cameras; 1657D camcorder with 4005 dockable Betacam SX recorder; Microcam split head camera; Sportcam multifunction camera; 9300 series digital mixer; EVOLUTION series, DBI2000 audio video acquisition interfaces; Pro-Cart broadcast cart machine; MPEG2 statistical multiplex; TER8623 digital compression decoder.

Circle (1086) on Free Info Card

Thomson Components & Tubes 5751
Introducing TH730 20-30kW air-cooled IOT; TH760 40-60kW water-cooled IOT; TH680 60-80kW water-cooled Diacode; TH610 10kW common amplification air-cooled Diacode.

Circle (1087) on Free Info Card

Tiernan Communications LA 303, S 1670
Introducing: 4:2:2 professional profile encoders, decoders; 1-RU IRDs, multiplexer modules; G.703 terrestrial interfaces, new modulators.

Circle (1088) on Free Info Card

Tiessecci S.N.C. 3918
Circle (1089) on Free Info Card

Tiffen Manufacturing Corporation 11048
Matte boxes; warm polarizing filters; light modification filters.

Circle (1090) on Free Info Card

TiltRac Corporation S 4574
Computer/multimedia products.

Circle (1091) on Free Info Card

Time Base Consoles 5441
Introducing: freeform, modular, custom consoles, console accessories; NICCABI rack systems; monitor, speaker stands.

Circle (1092) on Free Info Card

TimeLine Vista Inc. 2027
Featuring: MMR-8 multitrack recorder replaces magnetic dubbers with magneto-optical or hard disk; MicroLynx SMPTE, MIDI time code equipment; Lynx-2 products.

Circle (1093) on Free Info Card

TNN LA 407
Circle (1094) on Free Info Card

Toko America Inc. 9567
VAST-p transportable communication system with live, store-and-forward full motion video, audio transmission over Inmarsat A/B, ISDN/Accunet/T1, telephone, cellular, Ku-/C-/X-band communication channels.

Circle (1095) on Free Info Card

Torpey Controls 11238
All-digital display operating from SMPTE, ESE, DQS, Leitch codes; 1-, 4-inch LED digital displays; master clock drivers, impulse clocks, count up/down timers.

Circle (1096) on Free Info Card

Toshiba Corporation 6043
Digital SNG/LINK systems; HDTV products, CCD cameras, VCRs, picture computers, FO transmission equipment; NTSC/PAL CCD cameras; Hi8 cameras, camcorders; desktop video production equipment.

Circle (1097) on Free Info Card

Transoft Technology Corporation M 6851
Introducing: StudioBOSS FC Fibre Channel network for Macintosh, SGI, Windows NT platforms for peak bandwidth with lowest cost per node bandwidth.

Circle (1098) on Free Info Card

Transvideo S.A. S 5273
LCOM06, LCM06 monitors using flat panel displays for all standards and formats; 10-inch monitor with composite NTSC, PAL, digital serial 270Mb/s, VGA inputs with 640H/480V resolution.

Circle (1099) on Free Info Card



Trompeter Electronics Inc. 7211
BNC connectors; patching, distribution products.

Circle (1100) on Free Info Card

TRON-Tek Inc. S 2558
Introducing: ENG truck equipment; 12W power amplifiers.

Circle (1101) on Free Info Card

Truevision 8647
Several lines of video cards for desktop video systems including TARGA 2000.

Circle (1102) on Free Info Card

TV/COM International S 6156
Circle (1103) on Free Info Card

TV One Multimedia Solutions M 8059
Circle (1104) on Free Info Card

TV on the Web, a div. of Gardy McGrath M 7534
Service provider for video and animation on the Internet; full service video production facility streams customized video and animation to browsers via hyperlink to McGrath video server.

Circle (1105) on Free Info Card

TW Graphics S 3675
Graphic design firm specializing in design, layout and printing of video sleeves and graphic inserts.

Circle (1106) on Free Info Card

TWR Telecom/Lighting Inc. 3904
Featuring: towers, antennas, tower lighting systems; microwave relocation and equipment.

Circle (1107) on Free Info Card



Ultimate Corporation 11040
Plug ins for Adobe After Effects, Discreet Logic Flame; Ultimatte-8 digital 4:4:4 image compositing system with Smart Fill screen correction frame selection.

Circle (1108) on Free Info Card

Union Connector 5756
Introducing: 100-2P+G, 60-2P+G non melting 100a and 60a connectors; DistroBox 2 standard portable Distro series.

Circle (1109) on Free Info Card

Uni-Set Corporation 7224
Studio furnishings, sets.

Circle (1110) on Free Info Card

United Ad Label S 3029
Introducing: packaging solutions, laser and ink-jet printer labels.

Circle (1111) on Free Info Card

United Media 11027
Introducing: On-Line Express digital non-linear editing system on PC platform operating under Windows-NT; features broadcast quality, non-linear editing, real-time effects, two simultaneous streams of video.

Circle (1112) on Free Info Card

United States Broadcast 11907
Dealer/distributor, used equipment broker; cameras, lenses, accessories; power products, system integrators.

Circle (1113) on Free Info Card

U.S. Tape & Label Corporation 2824
Labels, promotional products.

Circle (1114) on Free Info Card

Utah Scientific 9925
UTAH 300 analog/digital routing switcher family.

Circle (1115) on Free Info Card

Utility Tower Company 2204
Tower products and services for AM, FM, TV, microwave and other communications.

Circle (1116) on Free Info Card



Valcom Ltd. S 4872
Circle (1117) on Free Info Card

VDONet Corporation I 4855
Introducing: VDOLive broadcast for live events over the Internet; VDOPhone using standards-based H.324 point-to-point video telephony over Internet.

Circle (1118) on Free Info Card

VEAM Div. Litton Systems Inc. 8882
Electrical connectors, multipin products; A/V FO products.

Circle (1119) on Free Info Card

Veetronix Inc. 11239
Featuring: keyboard, panel-mount switches, keycaps; hermetically sealed dry-reed switches, including 01/02 series with 500ma sealed reed, 03/04 series 100ma sealed reed.

Circle (1120) on Free Info Card

Visit us at
NAB
Booth #10176

$$\mu = GM$$

$$v = \sqrt{\frac{\mu}{r}}$$

The future is clear.

Hughes Communications Galaxy® is committed to providing you with the highest quality, high-powered satellite transmission.

Whether your needs require video, data or audio distribution, our advanced Galaxy and SBS system meets — and exceeds — the complex requirements necessary to build the global communications infrastructure of tomorrow.

To find out how our satellite capabilities can shape your future, call us at (800) 414-7382.



NYSE Symbol GMH © 1996 HCI

HUGHES
COMMUNICATIONS
GALAXY®

<http://www.hcisat.com>

Circle (156) on Free Info Card



Vela Research Inc. S 5426

Introducing: Centaur, Argus MPEG-2 encoders with digital compression of raw video to MPEG-2 compliant data streams; decoders designed for SCSI-2 PCI, EISA, VME bus architecture; 4-channel SCSI-2 decoder.

Circle (1121) on Free Info Card

Vertex Communications Corporation S 3156

Design, engineering, earth station antennas and components; tracking control systems; Turn-key installations, site testing, maintenance services.

Circle (1122) on Free Info Card

Victory Battery Company 6809

Battery products.

Circle (1123) on Free Info Card

VidCAD Documentation Programs Inc. 9664

Featuring VidCAD PowerTOOLS, CAD software to increase engineering productivity.

Circle (1124) on Free Info Card

Video Accessory Corporation 11235

Video distribution, synchronization, utility products; blackburst generator, S-video distribution amp.

Circle (1125) on Free Info Card

Video Data Systems 6928

Automated text/message systems emergency alert CG; closed caption CG.

Circle (1126) on Free Info Card

VideoFax Systems M 7373

PC-based hardware and software solutions for video information systems.

Circle (1127) on Free Info Card

Video Gainesville 8514

Digital switchers, converters and system equipment.

Circle (1128) on Free Info Card

Video International Development Corp. 8364

Featuring: MNR 320 digital framestore, median filter noise reducer; DTC 4600MV digital broadcast standards converter with motion estimation compensation; FRC 3024 24.00 frame rate converter.

Circle (1129) on Free Info Card

Videomagnetix Inc. 5518

Featuring: refurbished video heads for 1" C format Ampex, Sony, Hitachi; 2" heads for Quad machines; refurbished lower scanner for 1" Sony BVH VTR, upper drum assemblies for Betacam BVW machines; refurbished scanners for Ampex 1" Type C machines; manual, belt tape degaussers for high-density metal tape.

Circle (1130) on Free Info Card

Videomedia Inc. 8947

Introducing: VIP Suite integrated programs for time delay, clip logging, variable play, sync roll and video; 2XStream dual channel digital disk recording technology with realtime output of two video channels from one disk array; OZ-NLL non-linear/linear editing system and production environment for editing tape and disk-based media; OZ-PCE, StudioHeart on-line editing systems with preview mixer for prerecord editing; V-Lan VLXI, Express solutions for control.

Circle (1131) on Free Info Card

VIDEONICS 8283

Editing and character generator systems.

Circle (1132) on Free Info Card

VideoQuip Research Ltd. 1502

Introducing: DDA-105 AES/EBU 1x4 distribution amp; RS-410A AES/EBU 4x1 router; CDA-104 1x4 composite FM distribution amp; RS-41S 4x1 S-VHS video router.

Circle (1133) on Free Info Card



Video Systems Magazine 5444, S 1760

Circle (1134) on Free Info Card

Videotek 8534

Introducing: TVM-821 serial digital waveform monitor and vectorscope; VTM-200 multiformat on-screen monitor; VDP-8410 NTSC frame sync; SDR-800 series digital matrix router for audio, video; VSG-2030/VSG-2040 digital sync generator; RS12A video/stereo audio router; VSG-1D blackburst generator.

Circle (1135) on Free Info Card

Videssence 11961

Featuring: complete line of SRGB lighting products for television and corporate industrial applications.

Circle (1136) on Free Info Card

Viewgraphics Inc. S 3042

Introducing: Dynamo media stream adapter open systems MPEG2 multigraph transport stream interface for servers; Dataview 6.0 software for Dataview adapters including 3:2 pull-down conversion for video support for Quantel D16 and Flame archival distribution tools.

Circle (1137) on Free Info Card

Vinten Inc. 11414

Introducing: Autocam camera automation systems with HS-120P small profile servo pan/tilt head, LCP-8000 legislative control systems; Quattro 4-stage studio pedestal, Quarts 2-stage, single-stage studio pedestals, Vector 70 pan/tilt head.

Circle (1138) on Free Info Card

VistaCom S 1029

Circle (1139) on Free Info Card

Vistek Electronics Ltd. 11640

Introducing: V1600 modular interface system; V4228, V4238 Varicomb digital decoders, encoders; MPEG-2 multichannel and DSNG systems; Vector VMC motion compensated TV standards converter; Contribution video codecs; digital routers; video/audio mux and demux.

Circle (1140) on Free Info Card

Vyvx Inc. S 4112

Switched fiber-optic TV transmission services.

Circle (1141) on Free Info Card



Walter Brewer Corporation 5856

Integration of fluorescent-based fixtures into studio design; Teleconferencing lighting system design.

Circle (1142) on Free Info Card

Walters-Storyk Design Group S 1503

Featuring: architectural and acoustic design services.

Circle (1143) on Free Info Card

Ward-Beck Systems Ltd. 11025

Introducing: Renaissance radio and TV audio

consoles; ABB-1 digital audio monitor; analog audio DAs, digital DAs; M445 extended range meter/monitor system; PODS low-cost audio problem solvers.

Circle (1144) on Free Info Card

Warp 10 Technologies M 7751

Circle (1145) on Free Info Card

Wavephore Inc. I 4453

Develops, promotes and operates multimedia datacasting services.

Circle (1146) on Free Info Card

Waves Ltd. S 5960

Circle (1147) on Free Info Card

Wave:Space Inc. 1304

Circle (1148) on Free Info Card

Weather Central Inc. S 204, 11573

Liveline Genesis; MetLine with satellite-delivered data.

Circle (1149) on Free Info Card

Weathernews S 5674

Provider of color graphics system with animations including 3-D fly-by satellite animations.

Circle (1150) on Free Info Card

Wegener Communications 11940

Featuring: MCPC digital video transmission system; Level V control system; DVR 395 digital video receiver.

Circle (1151) on Free Info Card

Wenger Corporation S 4958

Introducing: sound isolation rooms, now with horizontal window feature.

Circle (1152) on Free Info Card

Wescam S 2553

Helicopter, aircraft camera support systems; installation on all types of moving vehicles and cranes.

Circle (1153) on Free Info Card

Westcott (F. J. Westcott Co.) 4857

Featuring: Westcott Box with accessory kits, attaches to lights with speed rings; collapsible Illuminator Plus backgrounds 6'x7' with 7' apron; 52" Illuminator reflectors in three metallic finishes; 48"x72" Illuminator reflector with sunlight/white finish; muslin diagonal background series in earth, light gray, sky blue, aurora.

Circle (1154) on Free Info Card

WEST PENN WIRE/CDT S 6138

Featuring: RGB sync coax 3-4-5, plenum type connectors for RGB cables; miniature 75-ohm coax, PVC, plenum types in colors; Tri-shield coax; Aqueal moisture resistant coax.

Circle (1155) on Free Info Card

Wheatstone Corporation 1212

Featuring: radio and TV audio mixing consoles, rackmount signal processing, control room furniture systems; audio console prewire systems.

Circle (1156) on Free Info Card

Whirlwind 5747

Introducing: MD-1 belt-pack mic preamp/line driver with integral headphone monitoring and phantom; Whirlwind audio utility products; audio/video connection, cabling, distribution products; US Audio mixers, amplifiers.

Circle (1157) on Free Info Card

Will-Burt 11800

Featuring: electro-mechanical telescoping masts with height to 38 feet; NightScan Chief elevated lighting system for nighttime ENG operation.

Circle (1158) on Free Info Card

Wilson Case M 8325

Featuring: ATA-300 reusable, protective transport shipping cases for the industry.

Circle (1159) on Free Info Card

SETTING THE PACE OF



NAB 97
MultiMedia World

Conferences: April 5 & 6-10, 1997

Exhibits: April 7-10, 1997

And it's getting hotter!

Bring Your Whole Team!

With so much going on — so much to see, hear, demo, learn and experience, you can't possibly be everywhere at once. Don't miss a beat — bring your whole team so you can make the most of everything NAB'97 has to offer.

- ▼ 5 new conferences
 - NAB Communications and Connectivity'97
 - Uplink'97: International Satellite Conference
 - Electronic Distribution Conference
 - NAB MultiMedia World
 - Internet Business Conference
 - New Media Professional Conference
 - Broadcast Designers Conference
- ▼ Hundreds of new exhibits for television/video/film, radio/audio, multimedia and the Internet and intranets. And if connectivity is important to you, there's plenty of it in the new Satellite and Telecommunications Pavilion.
- ▼ Plus, you can explore the world of cyberspace in the bigger and better Internet Theater and new Intranet Business Theater.

Register on the Web!

Check our website at www.nab.org/conventions/ for all the latest information on conferences, exhibitors, registration and housing. Interactive search tools make it easy to find the sessions and exhibitors that will benefit you, and plan your visit to NAB'97.

BE

Areas of Interest (Check all that apply):

☐ Radio/Audio ☐ Television/Video/Film ☐ Multimedia ☐ Internet/Intranet ☐ Telecommunications ☐ Satellite

Name	Title
-------------	--------------

Company _____ Call Letters

--	--	--	--

☐ AM ☐ FM ☐ TV

Address _____

City _____ State _____ Zip (Postal Code) _____ Country _____

Phone _____ Fax _____ E-Mail Address _____

For up-to-the-minute registration, exhibitor and program details:

- Visit the NAB Website at www.nab.org/conventions/
- Call the NAB Fax-On-Demand Service at (301)216-1847 from the touch-tone handset of your fax machine and follow the voice instructions.
- Or for information on attending, call (800)342-2460 or (202)775-4970. For information on exhibiting call (800)NAB-EXPO or (202)775-4988.



Winsted Corporation S 6126, 6921

Introducing: V8801 economy series vertical rack; 78.75-inch H rack with front and rear adjustable tapped rack rails, removable side panels and hinged door; grounding buss bar, electrical knockouts. Featuring: Digital Desks, Modular System/85 rack cabinets, consoles.

Circle (1160) on Free Info Card

Wireworks Corporation 7206

Manufacturer of professional audio, audio/video and control cable assemblies for live performance, theatre and broadcast industries; multipin disconnectable cabling components, transformer-isolated microphone splitters, audio/video multipin cable assemblies; mic and speaker cable assemblies, cable testers; Bandits cable markers; custom panels; CS-series microphone cable; VMP custom configured video multipin interconnect system.

Circle (1161) on Free Info Card

Wohler Technologies Inc. LA 501, 9773

Introducing: serial digital video logic inserters, video stillstores; digital video keys, mixers; digital SDI, AES mixers; AM series in-picture on screen audio level meters; digital delay systems; self-powered speaker systems; signal alarm systems; audio routers.

Circle (1162) on Free Info Card

Wolf Coach Inc. 11930

Introducing: Benchmark-2 ENG vehicle; Extended Power Truck SNG; hybrid digital, analog ENG vehicle.

Circle (1163) on Free Info Card

Wolffvision Inc. M 7270

Introducing: VZ-35B, VZ-15B professional series visualizers; VZ-7 portable series visualizer.

Circle (1164) on Free Info Card

WORLD BROADCAST News

World Broadcast News Magazine

5444, S 1760

Circle (1165) on Free Info Card

WSI Corporation 10980, M 6230

Featuring: WEATHERproducer, an integrated, data-to-weather workstation; New forecast and programming services including automated show building and a suite of broadcast imagery to deliver worldclass data, computer forecast modeling, graphics.

Circle (1166) on Free Info Card



Xicom Technology S 2572

Featuring: TWT amplifiers for the worldwide satellite uplink community.

Circle (1167) on Free Info Card

Xing Technology Corporation I 4853

StreamWorks compression product line.

Circle (1168) on Free Info Card



Yale Electronics Inc. 11265

Distributors; exhibit of antique radio equipment to commemorate 75-year anniversary.

Circle (1169) on Free Info Card

Yamaha Corp. of America 3021

Introducing: 03D digital recording mixer for audio post and music recording, interfaces directly with digital audio workstations for automated digital mixing; MX12/4 4-buss mixer features 12 inputs, XLR mic and 1/4-inch TRS jack inputs; REV500 reverberation unit using 3rd generation DSP chip for dense reverb and smooth decay, 20-bit A/D, D/A converters, integral source for snare drum, cross stick, pulse enabling reverb parameters.

Circle (1170) on Free Info Card

Yamashita Engineering Mfg. S 3635

Featuring: EDC-3000 line doubler; EDC-4000 line quadrupler; EDTV, HDTV products.

Circle (1171) on Free Info Card



Zack Electronics M 7269

Distributor for Amphenol, Erem, Neutrik, Ideal Industries, Tektronix, Cooper Tools, Switchcraft.

Circle (1172) on Free Info Card

Zapex Technologies Inc. S 4938

Introducing: ZX-2000G MPEG-2 realtime encoder; AC-3 realtime audio encoder.

Circle (1173) on Free Info Card

Zaxcom Inc. 10270

Introducing: Deva portable, removable hard disk recorder and digital mixer for field recording.

Circle (1174) on Free Info Card

Zero Cases Europe S 2932

Featuring: deep drawn light aluminum cases.

Circle (1175) on Free Info Card

ZERO STANTRON 5625

Featuring: Design Consoles engineered for durability in two sizes that include a monitor bridge with table top, cable raceway, angular positioning and other accessories; CAB/Cad design software bay-by-bay design methodology with auto selection of doors, panels, sides, integral logic, accessories.

Circle (1176) on Free Info Card

Zoran Corporation M 8163

Circle (1177) on Free Info Card

**SEE US AT NAB
BOOTH S 2447**

NEW

**MX Series
SDI Routing
Switchers**

**Digital
Audio
Shuffler**

**Audio A-D Converters
Audio D-A Converters
Audio Delays**

**Audio Embedders
Audio Extractors**

MetaWave™

Unit 11, Kingsclere Park,
Kingsclere, Hants.
RG20 4SW UK
Telephone: +44 1635 299 000
Facsimile: +44 1635 299 299
www.metawave.co.uk

ATEK SYSTEMS

Unit 7A, Building 2
1486 Highland Avenue
Cheshire
CT 06410 USA
Telephone: +1 800 423 0913
Facsimile: +1 203 272 9860

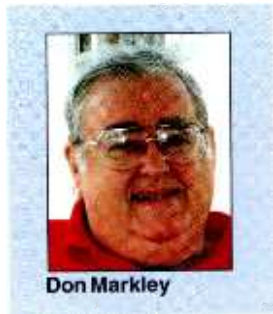
Circle (162) on Free Info Card

**Broadcast
Engineering**

**booths 5444 in the
Main Hall and
S1760 in Sands
Multimedia Hall at NAB**

Antenna pattern design

Directional antenna systems have been allowed for years for TV stations and have been widely used in UHF facilities to maximize the signal over a desired area. They have not been as popular for VHF facilities due to the lower ERP levels involved. However, there has been some use, usually in short-spaced situations or where quiet areas were involved.



Don Markley

A few years ago, the commission decided to allow the use of directional FM antennas to provide protection in short-spaced situations where commercial stations were involved. They had been usable for years before that for non-commercial stations. It took years before the commis-

sion decided that contour protection was as feasible for commercial stations as for non-commercial.

Directional FM antennas were treated the same way as TV antennas with regard to requirements, which certainly is realistic. Now, if we can just get the commission to understand that RF at FM frequencies is blocked by terrain just like television is, we can start looking at elevations that are more than 10 miles away. Sorry — raising that concept probably caused severe headaches for several attorneys as they struggle to understand that propagation cannot be legislated.

Why directionals?

There are generally two reasons for a directional antenna. You either want to put the signal into a desired area or block it from an undesired area. For example, there really is no reason for a station on a coast line to place a large signal out to sea. Transmitter power can be reduced for a given ERP by simply using a directional antenna to only send the power into areas where people may be.

In a similar fashion, if service is limited in a given direction due to extremely high terrain, a directional antenna can conserve the available watts to maximize service into the desired areas. Some hoops must be leaped through, however. The special showings are normally handled by the station's consulting engineer and mainly involve data that needs to be furnished to the commission. Most make good sense, but some still

fall into the category of "we have to fix this someday." For example, the rules for television call for the applicant to specify the time phasing of fields from elements, the space phasing of the elements and the ratio of fields. This is never actually provided because no one knows but the manufacturers, and the commission wouldn't know what to do with the information if it was sent in.

On the other hand, none of that data is required for FM antennas. Instead, you have to swear that you will mount the antenna on the tower as specified by the manufacturer and that no other antennas will be in the same aperture. You also have to specify that the antenna will not be top-mounted on a tower that includes a top-mounted platform larger than the tower. I really don't know what that one is about.

In any case, two big requirements apply to FM and television. The maximum ratio of maximum to minimum cannot exceed 15dB for UHF television or FM.



Directional antennas can be used in mountaintop locations, such as this, to direct signals toward population centers and away from sparsely populated areas. (Artist's rendering courtesy of Natural Marketing/Lodestar Towers California, Los Angeles.)



"THE PROFESSIONAL'S SOURCE . . .

FOR ORDERS CALL:

800-947-9928
212-444-5028

OR FAX (24 HOURS):

800-947-9003
212-444-5001

**ALL ORDERS SHIPPED
WITHIN 24 HOURS**
OVERNIGHT SERVICE AVAILABLE

On the Web: <http://www.bhphotovideo.com>



MILLER Fluid Heads and Tripods

The silky, smooth action of each Miller Fluid Head is the product of the finest quality cast and machined parts functioning together in a fluid environment. They are engineering masterpieces, built to operate under extreme conditions. They're engineered to exceptionally fine tolerances and their mechanisms are protected effectively against ambient moisture and dust.

Miller 20-Series II Fluid Head

- Dynamic fluid drag control
- Sliding/quick release camera platform
- Weighs 4 lbs. - handles up to 22 lbs.
- Counterbalance system compensates for nose heavy or tail heavy camera configurations and permits fingertip control of the camera throughout the tilt range.
- Includes independent pan and tilt locks, bubble level, dual pan handle carriers and integrated 75mm ball levelling.

Miller 25-Series II Fluid Head

- 100mm. ball level fluid head
- Robust, lightweight, low profile design
- Quick release camera platform
- Weighs 7 lbs. - handles up to 25 lbs.
- Multi-step fluid drag system and integrated counterbalance system provide ultra-smooth, repeatable pan-and-tilt fluid control and fingertip center balance for ENG camcorders, industrial CCD cameras or small studio cameras



#601-Lightweight Tripod

- Weighs 4.5 lbs., supports up to 30 lbs.
- Minimum height down to 24"
- Maximum height to 57"
- Extremely portable, folds down to 33"
- Engineered from thermoplastic moldings, diecast alloy and hard anodized tubular alloy.
- Fast, one turn, captive leg locks
- Includes 75mm (3") ball levelling bowl

#649-2-Stage Tripod

- Two extension sections on each leg. Operates at low levels as well as normal heights without the use of mini legs
- High torsional rigidity, no pan backlash
- Weighs 6 lbs., supports 50 lbs.
- Very portable, folds to 27"
- Includes 75mm (3") ball levelling bowl

System 20 #338—Miller 20 Head, 601 Lightweight Tripod, On Ground Spreader
System 20 ENG #339—Miller 20 Head, 649 2-Stage Aluminum, On Ground Spreader
System 25 #500—Miller 25 Head, 611 Lightweight Tripod, On Ground Spreader
System 25 ENG #502—Miller 25 Head, 641 2-Stage Aluminum, On Ground Spreader



sachtler

VIDEO 14/100 FLUID HEAD

- Sachtler Touch and Go System
- Integrated sliding battery plate
- Strengthened dynamic counterbalance in 2 steps
- Frictionless leak proof fluid damping with three levels of drag
- Vibrationless vertical and horizontal brakes
- Built in bubble for horizontal levelling

HOT POD TRIPOD SERIES

Especially developed for use in ENG, the Hot Pod tripod is the fastest in the world. The central locking system is activated on all three legs at the same time, while the pneumatic center column easily makes it possible to have the lens at a height of over 7 feet. The elevation force of the center column is factory set and doesn't require any setup. When moving to another location it can be carried by its handle located at the center of gravity.



ENG TWO-STAGE TRIPOD SERIES

Sachtler two-stage tripods have an enlarged height range (lower bottom and higher top position) so they are more universal. Legs can be locked in seconds with Sachtler's quick clamping. There are also heavy duty versions for extra stability. The heavy duty aluminum has a 20mm diameter tube vs. 16mm and the heavy duty carbon fiber has a 24mm diameter tube vs. 22mm. All heavy duty two-stage tripods have a folding tripod handle.

NEW! Sachtler CADDY Systems

Now Sachtler quality is available to low budget users. The price of a CADDY system includes the new 7-step dampened CADDY fluid head, ultra-light but rugged carbon fiber tripod, lightweight spreader and either a soft bag or cover. The CADDY fluid head features an adjustable pan arm, 7 step adjustment for quick counter balance and the self-locking Sachtler Touch and Go System.

- CAD 01**
Single-Stage ENG Carbon Fiber System:
- CADDY Fluid Head
 - ENG Single-Stage Carbon Fiber Tripod
 - SP 100 Lightweight Spreader
 - Transport Cover 100

- CAD 2A**
2-Stage ENG Carbon Fiber System:
- CADDY Fluid Head
 - ENG 2-Stage Carbon Fiber Tripod
 - SP 100 Lightweight Spreader
 - Soft padded ENG Bag

Vinten

Vision SD 12 and SD 22 Pan and Tilt Heads with Serial Drag

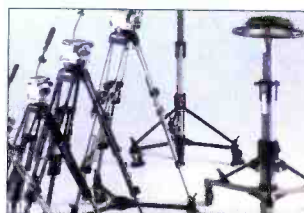
The Vision SD 12 and SD 22 are the first heads with the "Serial Drag" pan and tilt system. The system consists of a unique, permanently-sealed fluid drag and an advanced lubricated friction drag. Now you can achieve the smoothest pans and tilts regardless of speed, drag setting and ambient temperature.

- Patented spring-assisted counter-balance system permits perfect "hands-off" camera balance over full 180° of tilt
- Instant drag system breakdown and recovery overcome inertia and friction for excellent "whip pans"
- Consistent drag levels in both pan and tilt axis
- Click on, flick off pan and tilt caliper disk brakes
- Greater control, precision, flexibility and "touch"
- Touch activated, time delayed illuminated level bubble
- Working conditions from as low as -40° up to +60°C
- SD 12 weighs 6.6 lbs and supports up to 35 lbs.
- SD 22 weighs 12.7 lbs and supports up to 55 lbs.

Vision Two Stage ENG and LT Carbon Fibre ENG Tripods

The ultimate in lightweight and innovative tripods, they are available with durable tubular alloy (Model #3513) or the stronger and lighter, axially and spirally wound carbon fiber construction (Model #3523). They incorporate torque safe clamps to provide fast, safe and self-adjusting leg clamps.

- "Torque Safe" requires no adjustment. Its unique design adjusts itself when required, eliminating manual adjustment and maintenance and making for a much more reliable clamping system.
- New hip joint eliminates play and adds rigidity.
- They both feature 100mm levelling bowl, fold down to a compact 28" and support 45 lbs.
- #3513 weighs 6.5 lbs. #3523 CF (Carbon Fibre) weighs 5.2 lbs.



Vision 12 Systems

All Vision 12 systems include #33643 SD 12 dual fluid and lubricated friction drag pan/tilt head, single telescoping pan bar and clamp with 100mm ball base.

SD-12A System

- 3364-3 SD-12 Pan and tilt head
- 3518-3 Single stage ENG tripod with 100mm bowl
- 3363-3 Lightweight calibrated floor spreader

SD-12D System

- 3364-3 SD-12 Pan and tilt head
- 3513-3 Two-stage ENG tripod with 100mm bowl
- 3314-3 Heavy-duty calibrated floor spreader

Vision 22 Systems

All Vision 22 systems include #3366-3 SD 22 dual fluid and lubricated friction drag pan and tilt head, single telescoping pan and clamp with dual 100mm/150mm ball base.

SD-22E System

- 3366-3 SD-22 Pan and tilt head
- 3219-52 Second telescoping pan bar and clamp
- 3516-3 Two-stage EFP tripod with 150mm bowl
- 3314-3 Heavy-duty calibrated floor spreader



JVC DIGITAL S BR-D80/BR-D85

Digital Editing Recorder / Digital Editing Recorder with Pre-Read



Affordable, broadcast quality digital video is here. Digital-S reproduces images that not only are superior to any analog or digital 4:1.1 format but rival even the highest priced digital systems. It combines the robustness and reliability of a 1/2-inch format with 4:2:2 component processing and very mild compression to achieve and sustain excellent quality through multi-generation dubbing.

Broadcast Quality Digital Video

- 4:2:2 digital component processing adds richness and warmth unobtainable with lesser systems. Plus, only 4:2:2 stands up to the rigors of sophisticated chroma-keying, multi-generational editing, special effects, blue-screen compositing, matting, ATV up/down conversion, and multiple transconversion between compression systems
- Mild 3:3:1 compression reproduces the finest colored details while minimizing artifacts. Digital-S pumps out horizontal resolution of 540 TV lines. S/N ratio is 55dB.
- Audio is recorded by 2-channel, 16-bit PCM signals with a sampling frequency of 48kHz. PCM audio channels can be edited independently.
- Standard analog inputs/outputs provide outstanding performance for most applications. When virtually perfect dubs are required, the BR-D85 offers a serial digital interface. The one true digital video standard today, SMPTE 259M permits long cable runs and is used for direct connection to digital switchers, disk-based recorders and digital tape recorders (Optional with the BR-D80).

- They achieve super-high image quality using a robust, 1/2-inch metal particle cassette tape. The cassette housing has a dust-proof structure to increase tape life as well as your images. 1/2-inch format also offers an extra wide track-width of 20 microns for improved stability and reliability
- Has powerful error correction circuitry that not only replaces data in the unlikely event of a tape dropout but continues to play back a picture even with a clogged head.

Digital Editing

- Equipped with variable slow motion which can be accessed by standard editing commands. Smooth and noiseless, the image use of slow motion is equal to regular playback and is available within a range of $\pm 1/3X$.
- Longitudinal tracks include two auxiliary audio (cue) tracks and a control track for tracking purposes. Cue tracks provide easy location of edit points which can be heard at any tape speed.
- Because of its linear control track, Digital-S has a short look-up time which eliminates long pre-rolls. This feature achieves a stable picture faster, saving precious editing time.
- Auxiliary video (sub-code) area stores two selectable un-compressed lines of video. Suitable for recording closed caption or other information located in the vertical blanking interval.

PRE-READ EDITING (BR-D85 Only) Previously an exclusive feature of very high-end digital systems, video pre-read enables the recorder to first play back the digital signal on the tape, before recording a new signal in its place. Operable with either digital or analog signals, pre-read lets you perform layering and A/B roll editing with only two VCRs, instead of three.

GY-X2B 3-CCD S-VHS Camcorder



- Newly designed three 1/2" CCD image sensors deliver 750 lines of horizontal resolution and superb signal-to-noise ratio of 62dB
- Micro-lens technology provides exceptional sensitivity of F8.0 at 2000 lux and LO-LUX mode lets you shoot with almost no light! Shoot superb footage with excellent color balance at a mere 1.5 lux
- Variable Scan allows flicker-free shooting of a computer screen
- Full Time Auto White circuit lets you move from incandescent to fluorescent to outdoor lighting without changing white balance or the filter wheel
- Quick Record Mode - when turned on the camera is set to the auto iris even if lens is set at manual. Also activates Automatic Level Control and Extended Electronic Iris which provides both variable gain and variable shutter.

Shoot continuously from dark room to bright outdoors without having to adjust gain, iris or ND filter.

• Dual output system allows camera output to be connected directly to an external recorder.

KY-27C 3-CCD Color Video Camera



- New 2/3-inch broadcast-quality 380,000 pixel CCDs with advanced electronics deliver resolution of 800 horizontal lines and reduced smear
- High sensitivity of F9.0 at 2000 lux allows a truly usable minimum illumination of 1 lux with JVC's exclusive LoLux dual pixel readout sampling technique
- LoLux mode allows shooting scenes that were previously impossible due to insufficient lighting. CCDs are maximized for low light sensitivity equivalent to an electronic gain of 24dB, then the dual pixel readout system is added which provides an additional 6dB
- Together they provide >30dB without the noise and picture degradation normally associated with this much gain
- Signal-to-Noise ratio of 63dB assures virtually "noise free" images
- Auto knee circuitry extends a scene's light to dark dynamic range reproduction by up to five times without overexposure
- Has large 1.5-inch viewfinder with 600 lines of resolution and SMPTE color bars. Status system provides audio level, accumulated or remaining recording time, VTR operation, battery voltage and camera setup. Zebra pattern indication and safety zones with a center marker are also provided
- Variable scan function enables a precise shutter speed from 1/60.2 to 1/196.7 of a second in 256 increments to be set, matching a computer's scan rate. Almost any computer display can be clearly recorded
- Camera head allows direct input of genlock signal and timing adjustment. A wide range optional remote controls, RS-232 interface, multicore and triax CCUs are available
- Docks directly to the JVC BR-S422U, BR-S411UB and BR-S420CU professional S-VHS recorders. Optional adapters for docking to Hi-8 and Betacam SP are also available

Panasonic Broadcast & Television Systems



AG-DP800H SUPERCAM S-VHS 3-CCD Digital Signal Processing Camcorder



- Three high-density 380,000 pixel CCDs with half-pitch pixel offset achieves over 750 lines of horizontal resolution, a S/N ratio of 60dB and remarkable sensitivity of 18 at 2000 lux. Additionally the Frame Interline Transfer (FIT) CCDs minimize vertical smear, so you maintain impressive picture quality even in very bright illumination
- Digital Signal Processing circuitry provides four valuable benefits:
 - 1) Consistently reliable up-to-spec performance
 - 2) Fine adjustment of a wide range of parameters
 - 3) Memory storage and instant recall of specific settings
 - 4) More flexible and higher quality image processing, as well as easier maintenance.
- Built-in internal time code generator lets you record with SMPTE LTC/VITC (Longitudinal/Vertical Interval) time code
- Two hi-fi stereo audio channels with a dynamic range of 80 dB, as well as two linear audio channels with Dolby NR, Normal/Hi-Fi recording is selectable. Uses XLR connectors to further ensure high-quality sound
- Has a 26-pin connector on the back that outputs a composite or component video signal. This enables convenient backup recordings using an additional VCR equipped with a 26 or 14-pin connector
- Phantom power can be supplied to an optional microphone. Power can be switched off to prevent battery drain when not in use.

**Purchase a Panasonic AG-DP800H SUPERCAM
and receive a \$1000 Rebate directly from Panasonic.**
thru 3-31-97

WE BUY, SELL AND TRADE USED VIDEO EQUIPMENT

SEVEN-DAY CUSTOMER SATISFACTION GUARANTEE

www.americanradiohistory.com

... FOR PHOTO & VIDEO"



TO INQUIRE ABOUT YOUR ORDER:
800 221-5743 • 212 807-7479

OR FAX 24 HOURS:
800 947-2215 • 212 366-3738

119 WEST 17TH STREET, NEW YORK, N.Y. 10011

Store & Mail Order Hours:

Sun 10-4:45 • Mon & Tues 9-6 • Wed & Thurs 9-7:15 • Fri 9-1 • Sat Closed

BUSINESS LEASING AVAILABLE



NRG

POWER VEST SYSTEM

The Power Vest combines the comfort and convenience of a photo-journalist style vest with the power of NRG's highest capacity power belt. Available in two styles, the **Field** model is designed for use in a field production environment, while the **Event** model is for shooting events where style is everything. The **Field** model is ruggedly constructed from black high density weatherized ballistic nylon and has an open-cut style that makes it comfortable to wear in a variety of climates. Also has a highly adjustable design to fit almost any physical proportion.

- Internal and external pockets for blank tapes and accessories, a clear insert window for a press pass or business card, D-rings for cables and microphones, and an integral padded camera rest on the right shoulder.
- Cleverly concealed inside the vest is your choice of 12-volt 86 watt hour or 13.2-volt 95 watt hour nicad cell packs.
- A control box on the front features dual power outputs (dual cigarette, dual XLR or mixed).
- 7-stage "fuel-gauge", charge status indication and auto-reset short/overload protection.

The **Event** model is very similar to the **Field** except in place of rugged fabric and pockets it features shoulder to sternum black satin lux fabric. Worn under a suit coat, the **Event** model is indistinguishable from a formal dress vest and it still retains interior and low exterior pockets. Both vests include 300-series charger (12 hrs.) and can be used with the optional Intelliquick Fast Charger (2 hrs.)

POWER CAN SERIES

For powering single or multiple pieces of 12v DC equipment for extended periods of time, nothing beats the power and convenience of NRG's Power-Can Series. It integrates an ultra-high capacity, high-discharge-capable UPS type lead acid power cell, a world-wide fast charger, and computer-controlled monitoring system with display—in a single, rugged package. Connect up to four pieces of equipment simultaneously. From a midnight emergency scene to a wedding reception in the park, the Power-Can delivers ample power for extended running time.

- Recharge in 8-10 hours by simply plugging the Power-Can into any source of AC power (90-250v AC).
- LCD display shows discharge/charge status, voltage etc.
- An optional "Power Dolly" allows the Power-Can to be rolled for easy transport.
- Available in 18, 28 and 40 amp versions, each Power-Can has either four cigarette lighter connectors, four 4-pin XLR connectors or two of each.

HORITA

BSG-50

Blackburst/Sync/Tone Generator

The BSG-50 provides an economical means for generating the most common RS-170A video timing signals used to operate various video switchers, effect generators, TBCs, VCRs, cameras and video edit controllers.

- 6 BNC video/pulse outputs
- Now available: 6-line video, 4 sync, 2 subcarrier
- Each sync output individually settable for composite sync, composite blanking, H-drive, or V-drive
- Separate buffer for each output—maximum signal isolation
- 1KHz, 0dB sine wave audio tone output, locked to video
- Outputs can easily be configured to meet specific user and equipment needs.

*269

CSG-50

Color Bar/Sync/Tone Generator

- Generates full/SMPTE color bars, blackburst and composite sync signals
- Built-in timer can automatically switch video output from color bars to color black after 30 or 60 seconds. Easy and convenient for producing tape leaders and stripping tapes with color bars and black
- Front panel selection of full-field or SMPTE color bar patterns or color/black (blackburst) video output
- Includes crystal-controlled, 1KHz, 0dB audio tone output
- Outputs: video, sync, ref frame, 1 KHz, 0dB
- Audio tone switches to silence and color bars change to black when using 30/60 second timer
- Fully RS-170A SC-H phased and always correct.
- No adjustment required.

*349

WE STOCK THE FULL LINE OF HORITA PRODUCTS INCLUDING:

- WG-50 - Window Dub Insert Generator/Insert
- TRG-50 - Generator/Insert/Search Speed Reader
- TRG-50PC - Has all of the above plus RS-232 control.
- VTC-50 - VTC Generator, LTC-VTC Translator
- VTC-50 - VTC to LTC Translator
- VTC-50 - VTC to LTC Translator / RS-232 Control
- HLT-50 - HLT (EVO-9800/9550) to LTC Translator
- TSQ-50 - NTSC Test Signal Generator
- SCT-50 - Serial Control Timer "Industrial" CC
- Time-Date Stamp, Time Code Captioning
- SAG-50 - Sale Area, Convergence Pattern and Oscilloscope Line Trigger and Generator



Canon

IF+ Series 1/2-inch and 2/3-inch Zoom Lenses

Canon's IF+ family of lenses are engineered to meet the needs of the next generation of broadcasting while meeting the standards of today. Besides having the widest wide angle lens available, the IF+ lens series have wider angles at shorter M.O.D. (Minimum Object Distance), provide higher MTF performance and incorporate Hi-UD glass for reduced chromatic aberration. In addition to superb optics they're all designed with Canon's "Ergonomic Grip" for fatigue-free shooting over an extended time. IF+ lenses are your assurance of unsurpassed quality and performance for today and tomorrow.

J15ax8B

A next generation internal focusing lens with the shortest MOD and widest angle of any standard lens, the J15ax8B IRS/IAS is a standard ENG lens that lets you shoot in tight or restricted areas at the closest minimum object distance ever possible and capture more of the subject. It incorporates all the great features of IF+ lenses including a built-in 2X extender, high MTF performance, Hi-UD glass, square lens hood and Canon's "Ergonomic Grip".

J20ax8B IRS/IAS

Excellent for ENG, sports and production, the J20ax8B IRS/IAS lets you squeeze in shots from 8mm and still take you all the way out to 320mm with its built-in extender. Incorporates all IF+ features, plus is the only lens (besides the J9ax5.2B IRS/IAS) with a Vari-Polar lens hood, enabling rotation of attached filters.



Anton Bauer

Logic Series DIGITAL Gold Mount Batteries

The Logic Series DIGITAL batteries are acknowledged to be the most advanced in the rechargeable battery industry. In addition to the comprehensive sensors integral to all Logic Series batteries, each DIGITAL battery has a built-in microprocessor that communicates directly with Anton/Bauer InterActive chargers, creating significant new benchmarks for reliability, performance, and life. They also complete the communications network between battery, charger and camera. With the network in place, DIGITAL batteries deliver the feature most requested by cameramen: a reliable and accurate indication of remaining battery power.

DIGITAL PRO PACS

The Digital Pro Pac is the ultimate professional video battery and is recommended for all applications. The premium heavy duty Digital Pro Pac cell is designed to deliver long life and high performance even under high current loads and adverse conditions. The size and weight of the Digital Pro Pac creates perfect shoulder balance with all cameras/camcorders.

- DIGITAL PRO PAC 14 LOGIC SERIES NICAD BATTERY 14.4v 60 Watt Hours. 5 1/8 lbs. Run time: 2 hours @ 27 watts, 3 hrs. @ 18 watts

- DIGITAL PRO PAC 13 LOGIC SERIES NICAD BATTERY 13.2v 55 Watt Hours. 4 3/4 lbs. Run time: 2 hours @ 25 watts, 3 hours @ 17 watts

GOLD MOUNT BATTERIES

Logic Series Gold Mount batteries are identical to the respective DIGITAL versions with respect to size, weight, capacity, IMPAC case construction, and application. They are similarly equipped with micro-code logic circuits and comprehensive ACD sensors. They do not include DIGITAL microprocessor features such as the integral diagnostic program "Fuel Computer", LCD/LCD display and InterActive viewfinder fuel gauge circuit.

- PRO PAC 14 NICAD BATTERY (14.4v 60 Watt Hours)
- PRO PAC 13 NICAD BATTERY (13.2v 55 Watt Hours)
- TRIMPAC 14 NICAD BATTERY (14.4v 40 Watt Hours)
- TRIMPAC 13 NICAD BATTERY (13.2v 36 Watt Hours)
- COMPAC 14 NICAD BATTERY (14.4v 40 Watt Hours)
- COMPAC 13 NICAD BATTERY (13.2v 36 Watt Hours)

InterActive 2000 Power/Chargers

A new generation of portable power systems, the InterActive 2000 Power/Charger series was designed from the ground up to offer unprecedented flexibility and economic expansion capabilities. Fully compatible with all current and future Gold Mount batteries, the InterActive 2000 Power/Chargers deliver all the advancements and proven reliability of interactive charging plus the ability to power a camera from AC mains. They also offer a unique, totally modular design that allows economical expansion to meet future needs. Starting with a base model, upgrades can be easily added at any time. With an unparalleled combination of value and features, the InterActive 2000 Power/Charger system redefines the standard of power for video applications.

Standard Features on all InterActive 2000 Power/Chargers

- Two or four position models each with the full complement of InterActive technologies (see previous page) including: Automatic balance and rejuvenation, Lifesave, Maintenance, Cold battery safety and Power Loss Memory modes.
- They have a slim, lightweight design for easy portability. The 2702 and 2401 Quad Power/Chargers fit easily in a notebook computer carrying case and the 2701 and 2401 Dual Power/Chargers weigh just 2.3 pounds. Plus, they include power supplies, so you can leave your AC supply behind!
- Built in regulated DC power supply output powers cameras from AC mains worldwide. Wide range (90-260 volts AC, 50/60 Hz) input automatically adapts to any worldwide source.
- Standard serial output for printer and PC interface.
- Two power choices for optimized performance and economy.
- LCD automatically displays critical battery and charger data.
- Expanded communications with Digital Batteries and new charging protocols improve charge times and performance.
- Modular design allows addition or upgrades after purchase.
- A charge position expansion port allows the addition of expansion charge modules to increase charge capability to four, six or eight batteries, including NP and 8P-90 types.
- Optional Diagnostic/Discharge module featuring automatic calibration of digital batteries is available for each model. (standard on Quad 2702)
- Power supply upgrade allows 40 Watt (2400 series) to be upgraded to 70 Watt (2700 series) capability.

QUAD 2702/2401 Four-Position Power/Chargers

The 2401 and 2702 are the lightest (and slimmest) full featured four position chargers ever available. Designed for the rigors of professional use, they can fast charge four Gold Mount batteries and can be expanded to charge up to eight. They also power any camera/camcorders from any AC main. All in a package the size of a notebook computer and weighing a mere 4 lbs (1.8 kg)! The 40 watt (upgradable to 70 watts) 2401 will charge ProPac batteries in two hours and TrimPac batteries in one hour. Add the Diagnostic/Discharge module and the QUAD 2401 becomes an all purpose power and test system with its standard LCD providing instant access to battery status. The 70 watt QUAD 2702 bundles the complete package of all the Power/Charger features in the ultimate professional power system.



Dual 2702/2401 Two-Position Power/Chargers

The DUAL 2701 (70 watt) and 2401 (40 watt) are sleek, rugged and economical two position Power/Chargers that have all the features of Anton/Bauer InterActive 2000 technology including DC camera output and an LCD display that shows the status of each battery as well as the internal battery data communicated from Digital Batteries. The high performance DUAL 2701 will charge any Gold Mount battery in one hour, the DUAL 2401 charges ProPac batteries in two hours and TrimPac in one. Their compact, lightweight package design makes them the ultimate travel Power/Chargers. They can also be upgraded with the Diagnostic/Discharge Module and/or with the Expansion Charge Modules to charge up to six batteries of any type.



PROFESSIONAL VIDEO TAPE



Professional Grade VHS		
PG-30	2.29	PG-60 2.49 PG-120 2.69
Superior Grade Double Coated VHS		
SG-30	3.39	SG-60 3.99 SG-120 4.49
H471S-VHS Double Coated		
ST-30	6.99	ST-60 7.49 ST-120 7.99
M221 Hi 8 Double Coated		
Metal Particles		
P630HMP	4.99	E630HME 8.39
P660HMP	6.49	E660HME 10.49
P6120HMP	8.49	E6120HME 13.99
M321SP Metal Betacam (Box)		
05S	17.95	10S 18.49
20S	19.95	30S 22.95
60L	31.95	90L 49.95

maxell

P1 PLUS Expatial VHS		
T-30 Plus	1.69	T-60 Plus 1.99 T-90 Plus 2.09
T-120 Plus	2.19	T-160 Plus 2.69
HGXT-PLUS Expatial VHS (Box)		
HGXT-60 Plus	2.69	HGXT-120 Plus 2.99
HGXT-160 Plus	3.99	

BQ Broadcast Quality Expatial VHS (Box)		
T-30 BQ	5.49	T-60 BQ 6.19 T-120 BQ 7.39

BQ Certified Professional S-VHS (In Box)		
ST-31 BQ	7.19	ST-62 BQ 8.09
ST-126 BQ	8.39	ST-182 BQ 14.99

Betacam SP		
B5MSP	15.75	B10MSP 17.75 B20MSP 19.75
B30MSP	20.50	B60MLSP 29.75 B90MLSP 46.49

SONY

Hi-8 Professional Metal Video Cassettes		
P6-30 HMPX	4.59	P6-30 HMEC 7.99
P6-60 HMPX	6.59	P6-60 HMEC 11.49
P6-120HMPX	8.89	P6-120HMEC 15.49

Hi-8 Metal Evaporated Editor (HMEAD)		
E6-30 HMEAD	10.49	E6-60 HMEAD 14.89
E6-120 HMEAD	20.19	

PR Series Professional Grade VHS		
T-30PR	2.39	T-60PR 2.59 T-120PR 2.79

PM Series Premier Grade Professional VHS		
T-30PM	3.49	T-60PM 3.99 T-120PM 4.79

BA Series Premier Hi-Grade Broadcast VHS (In Box)		
T-30BA	3.59	T-60BA 3.99 T-120BA 4.79

MQ Master Quality S-VHS (In Box)		
MOST-60	7.99	MOST-120 8.39

BRS 3/4" U-matic Broadcast Standard (In Box)		
KCS-10 BRS (mini)	8.29	KCS-20 BRS (mini) 8.99
KCA-10 BRS	8.19	KCA-20 BRS 8.69
KCA-30 BRS	9.69	KCA-60 BRS 13.39

XBR 3/4" U-matic Broadcast Master (In Box)		
KCS-10 XBR (mini)	8.79	KCS-20 XBR (mini) 10.19
KCA-10 XBR	9.29	KCA-20 XBR 10.69
KCA-30 XBR	11.99	KCA-60 XBR 15.69

KSP 3/4" U-matic SP Broadcast (In Box)		
KSP-S10 (mini)	9.59	KSP-S20 (mini) 11.09
KSP-10	10.09	KSP-20 11.59
KSP-30	12.99	KSP-60 16.99

BCT Metal Betacam SP Broadcast Master (Box)		
BCT-5M (small)	14.99	BCT-10M (small) 15.99
BCT-20M (small)	17.99	BCT-30M (small) 18.99
BCT-30ML	21.49	BCT-60ML 27.99
BCT-90ML	41.99	

BCT Metal Professional Series		
UVW-30MLA	18.95	UVW-60MLA 24.99
UVW-90MLA	39.95	

Quick-Draw Professional		
FOR CAMCORDERS OR STAND ALONE CAMERAS		

Designed for working from the back of a van or the trunk of your car. The top loading case has a wide open tote back top that stays neatly out of the way. It's lighter and more compact than shipping cases, thus saving valuable storage space. With other equipment cradled around it the sturdy built-in frame provides added protection.

- Heavy duty shoulder strap & comfortable leather hand grip.
- Carry in it crowds - crush proof aluminum guard protects viewfinder.
- Fits into back seat and fastens securely with seat belt.
- Holds camera with on-board battery attached.
- Lid closes with Velcro for quick opening or secure with full-length zippers.
- Dual purpose rear pocket is an expandable battery chamber or all-purpose pocket.
- Two trim exterior pockets and clip board pocket.



ALL ORDERS SHIPPED WITHIN 24 HOURS

Circle (163) on Free Info Card

www.americanradiohistory.com



"THE PROFESSIONAL'S SOURCE" . . .

FOR ORDERS CALL:

800-947-9928
212-444-5028

OR FAX (24 HOURS):

800-947-9003
212-444-5001

**ALL ORDERS SHIPPED
WITHIN 24 HOURS**
OVERNIGHT SERVICE AVAILABLE

On the Web: <http://www.bhphotovideo.com>



DIGITAL PROCESSING SYSTEMS INC.

PVR-2500 'Perception' Digital Video Recorder

The Heart of an Advanced Digital Audio/Video Workstation

The PVR-2500 offers powerful features for awesome animation, morphing and rotoscoping capabilities. With features like 720 x 480 resolution, 10-bit 2x oversampled video encoding, better than D1 scaling, component and S-Video outputs, multi-processor support and integrated FAST SCSI-2 controller, it empowers your computer to rival the finest professional production studios.

- The PVR-2500 is a full-length PCI card with a FAST SCSI-2 controller which connects to one or up to seven dedicated hard drives. Because the SCSI controller is integrated with the PVR-2500, video data never has to go over the PCI bus during playback. This avoids the bottlenecks found in systems which use the computer's hard drive for video storage.
- Perception gets animations out of your computer fast and easy. Its exclusive multi-format virtual file system ensures complete integration with your Windows NT applications. Any acquired video or computer generated Perception video clips appear simultaneously in many different file formats including TARGA, SGI, BMP and IFF. Perception is compatible with Lightwave 3D, Autodesk 3D Studio Max, Crystal Graphics TOPAS 5.1 PRD, Microsoft Softimage, Elastic Reality and others.
- Runs under Windows NT 3.5 on computers with Pentium, DEC Alpha or MIPS processors. Perception's software utilizes NT's native support for multitasking and multiple processors, allowing use with the most powerful computers.
- Perception performs real-time interpolation of 30 fps video to 24 fps film rates or vice versa. This means that it is also at home on the Hollywood movie set as well.

AD-2500 Component Video Capture Card

Coupled with the AD-2500 live video capture daughter card, the PVR-2500 becomes a broadcast-quality digital disk recorder. It delivers unsurpassed picture quality and storage capacity is limited only by the size/number of attached SCSI hard drives.

- Has component, composite and S-Video inputs for real-time recording. Captured video can also be exported as sequential RGB files for rotoscoping and other compositing applications.
- Incorporates a sophisticated automatic entropy prediction circuit that analyzes the content of incoming video and dynamically calculates the optimum amount of compression on a field-by-field basis—even during real-time recording. You also have complete manual control over compression level/quality settings.

FX-2500 Perception Effects Accelerator

The FX-2500 significantly reduces the time required to render complex non-linear transitions. Although it doesn't deliver real-time transitions, it significantly improves the productivity of non-linear editing systems by dramatically speeding up the rendering time for many effects and transitions.

- A stand-alone PVR-2500 provides real-time cuts between video clips, but other transitions, such as dissolves and wipes, substantial delay can occur. A 30 frame dissolve can take minutes to render, even with the latest PC, because the host CPU processes source frames on a pixel-by-pixel basis. The Perception FX reduces the waiting time to under 10 seconds.



- Video output section utilizes 10-bit 2x oversampled encoding and provides broadcast quality CCIR-601 (720 x 480) resolution. Dynamic range is in excess of D1 scaling so images are brighter, have more color and greater spatial resolution than ever before. Component, composite and S-Video outputs are provided via the included breakout cables.
- Also control BVU protocol VCRs for video acquisition. VCR-like controls on the Perception's GUI simplifies the task of batch digitizing and recording. In this mode, the PVR-2500 can read SMPTE time code from the source deck.
- Can be used with any Windows NT compatible sound card while synchronization of audio and video is maintained by the PVR hardware. Captured audio is stored on the computer's system hard drive, not on the dedicated drives. This approach provides maximum flexibility for manipulating audio and video during editing.
- Can be used with third party editing software such as Adobe Premier or iSync Speed Razor MACH III. In fact, a system equipped with the PVR-2500, AD-2500 capture card, a sound card, editing software & one or more SCSI drives becomes a non-linear editor of unparalleled performance—at an unbeatable price.

DAR-2500 Digital A/V Recorder

Featuring comprehensive audio post-production capabilities, the AAV (Audio for Video) board provides perfect video/audio synchronization when used with the PVR-2500. A full-length PCI card, the AAV's input and output connections are made via the supplied breakout cables while digital audio is stored on the system hard drive. And to ensure compatibility with third-party audio editing software, it plays and records standard uncompressed WAV files. It can also be controlled directly by video editing software like iSync's Speed Razor MACH III.

- Non-linear, non-destructive audio editing. No waiting for edits to compile.
- True audio scrub.
- Simultaneous record/playback. Play up to three stereo tracks while recording one stereo track.
- Mix four stereo source tracks down to two output channels in real-time.
- Four-band Parametric EQ for each channel (assignable by stereo pair).
- Real-time reverb and compressor/limiter. Additional effects can be easily added via software upgrades.
- Built-in LTC/VTC time code generator/reader/inserters lets you create window dubs with time code information superimposed over composite or S-Video signals.
- Unlimited audio editing capabilities with third party software.



FAST The Art of Digital Video

Video Machine

Video Machine is an edit controller for A/B roll, A/X roll and audio/video split editing. It controls any VCR with Control-L or Panasonic 5-pin edit protocol. With optional interface it provides RS-232C/RS-422 machine control as well. Controls 3 VCRs with no other hardware. It also features EDL export, alpha wipes, test pattern generator, Editing Panel, and more than 400 digital effects.

- Bundled VM-Studio software uses a graphical timeline interface for editing. You can work with all available material at the same time, and all objects in the timeline can be edited and moved to any position, any time.
- During previews and recording uses time code (VTC, RC, Control Track) to accurately cue the VCRs to the in/out points of individual clips. Graphics, titles, and effects are automatically inserted at the point specified.
- Over 400 digital video effects (dissolves, wipes, tumbles, flips, picture-in-picture, fly-ins, fly-outs, zoom etc.). With the DVE Editor, create an unlimited number of 2D effects. All effects are performed in real time.
- Supports composite and S-Video signals in PAL and NTSC. Up to six video inputs (two of which are controllable) can be connected, and any two can be assigned to the two video channels. Video standards can be mixed in real time.
- Two integrated frame synchronizers eliminate the need for TBCs (Time Base Correctors). Also provides two 32-bit framestores and a built-in background color generator.



- VM-Title lets you create titles, logos and graphics in Windows application such as Corel DRAW or Photoshop. Use any font, size and color. Graphics produced in standard word processing or graphics applications are imported via the VM-Title software module. Scanned pictures or images can even be imported from Photo CDs. Titles and graphics can be manipulated with any of the effects available. Functions such as scroll and crawl titling are off and running within a matter of seconds. Has complex filters for anti-flickering, scaling etc. Produces text without "stair-stepped" effects.

VIDEO MACHINE + DPR = HYBRID EDITING

Linear and Non-Linear Editing in a Single System for Maximum Flexibility

Video Machine with DPR (Digital Player/Recorder) is the only system which offers real-time mixing of analog and digital sources. Video Machine with DPR integrates two complete editing systems under one interface, thus ensuring the optimum balance of cost, performance, training, and maintenance. It executes both tape- and hard disk-based edits effortlessly, and it's simply a matter of preference whether you work in analog or digital, or both—all on the same system! Only the FAST hybrid system gives you the best of both worlds. Instead of being stuck with an inflexible system, you can select your method to suit your circumstances. For example, viewing and logging your tape footage can be tedious enough without having to face the next step. But imagine instructing the system to copy selected scenes onto the hard disk, while you take a coffee break. When you come back, you're ready to enjoy the creative freedom of non-linear. And once the creative decisions are made, you can either have the system perform the on-line edit for you, from tape or hard disk, or you can choose to go with an EDL export. No other system gives you this much flexibility.

DPR (Digital Player/Recorder):

- With DPR Video Machine becomes a state-of-the-art digital editing system. In addition DPR executes effects and transitions in real time. True M-JPEG compression enables every frame or field to be accessed individually.
- Compresses and decompresses video (software-selectable) from 200:1 to 2:1. DPR delivers broadcast, on-line quality allowing for mastering directly from the hard disk.
- Video Machine system treats the DPR just like any other "normal" video source. The DPR is enabled by a single mouse-click in the VM-Studio software. The edit suite instantly converts to nonlinear and allows you for example, to execute an offline edit in real time. A second click changes the editing suite back to analog. You can now edit the project using tape source material from your VCRs. Whether working on- or off-line, linear or non-linear—all four editing modes are available on one complete system.

- Integrated digital eight-channel mixer allows audio to be edited in real time in standard WAVE format. The audio is synced to video and recorded in full 16-bit, 48 kHz sampling. It is easy to split the digital audio and video signals, and the waveform display helps to precisely position edits. All eight on-line tracks can be monitored simultaneously.
- DPR is an ideal solution for animation. It offers broadcast quality while reducing recording time to a fraction of what is required with single-frame capable VCRs. Scene logging and batch digitizing are also automatically integrated via the connection of the edit control functions of Video Machine.
- Video Machine is based on an open architecture design and is almost infinitely expandable as far as storage. Up to 29 hard disks can be daisy-chained directly to the DPR. Using 9 GB drives, up to 260 GB is available on the system—enough for 15 hours of 5:1 or 300 hours of 100:1 video.

OPTIONAL ACCESSORIES:

Video Machine is designed to interface perfectly with traditional broadcast equipment. These rack-mountable accessories integrate Video Machine into a professional video studio environment.

Studio Control (SC):

Connects video, audio, sync, machine control and TC cables from VCRs to Video Machine. With built-in LTC reader/generator, additional preview outputs, balanced XLR audio and reference in/out, the SC Box offers a simple way to interface with studio equipment.

YUV Interface:

19-inch terminal box connects to the internal YUV board. Enhanced analog bandwidth, 2X oversampling and a balanced signal filter guarantee excellent quality. Included calibration software lets you adjust volume and timing. Digital signal passes directly without generation loss.

GPI Box:

The GPI box provides control of external DAT recorders, CD players, video mixers and effect generators. As a master, Video Machine can sync control of up to four devices with pulse signals and has tally support for live cameras. In slave mode, Video Machine serves as the player for titles, graphics and digital video effects.

Jog/Shuttle Wheel:

An alternative to the mouse and keyboard, the physical Jog/Shuttle wheel offers a better "feel" for the edit and during preview.

TRUEVISION

TARGA2000 DTX/RTX



NEW!

The **TARGA 2000 DTX** (data throughput enhanced) is a next generation digital video solution that delivers unmatched price/performance on the desktop, as well as offering a secure, flexible upgrade path to real-time digital video effects. The 2000 DTX offers an open systems architecture and an industry best data rate of up to 12 MB/second to deliver the most pristine video quality available on the desktop today—at any price. A single code configuration of the award-winning TARGA 2000 RTX, the 2000 DTX is a perfect mate for professional non-linear editing, compositing, animation, and 3D applications.

- Motion-JPEG codec, DVR architecture delivers near lossless quality video. Supports data rates up to 12MB/second (400 KB/frame NTSC).
- CCIR 601 720 x 486 NTSC and 720 x 576 PAL resolution support. Square pixel 640 x 480, 640 x 486 NTSC or 768 x 576 PAL resolution support.
- Synchronized audio and video in hardware.
- Balanced CD and DAT quality audio via XLR connectors with optional Breakout Box. The box can be utilized as a desktop device or rack mounted in a standard 19" rack.

The **TARGA 2000 RTX** brings real-time processing and the highest I/O throughput to the desktop. It delivers real-time DVE, broadcast quality video, and professional I/O connections with support for industry standard video file formats under MacWindows NT operating systems. The system is designed to meet the needs of video professionals who are looking for an open-system solution for non-linear editing and desktop multimedia production.

- Processes digital video effects such as wipes, fades and dissolves in real-time. These common transition effects now require long render times using the host CPU for many computer-intensive tasks. On the RTX, these frames are created in real-time at full quality. Once frames are created by the RTX, they can be instantly output to tape at the high quality level demanded in professional broadcast applications—full motion 60 field NTSC and 50 field PAL broadcast quality video (300 KB/frame). Supports CCIR 601 as well as square pixel resolutions.

- Drives both RGB and NTSC/PAL monitors simultaneously.
- On-board acceleration up to 600% of 19 popular Adobe Premiere transitions.
- Cross platform support for Mac QT and Windows NT.
- Video-for-Windows native file formats.
- Supports component YUV, RGB, S-Video and composite input and output.
- For those that will come to need non-linear A/B roll editing capability, there is also an upgrade path to the real-time effects processing of the TARGA 2000 RTX.

- Fully video-for-windows and QuickTime native, so all your current authoring applications supporting these standards will fly with TARGA.
- Drives both the video monitor and the RGB screen up to 21 inches at 24-bit color and supports full-motion preview on both RGB and video displays for optimal video editing.
- Designed for easy integration into broadcast and post-production facilities, the 2000 RTX includes a breakout box which can be rack mounted or used as a stand alone device on the desktop. The box allows easy connection to Composite, S-Video or Component input/outputs as well as XLR balanced audio, genlock and alpha channel connections.

ANTEX ELECTRONICS

StudioCard

4-Channel Digital Audio Card for Windows

The next generation in digital audio for the desktop, StudioCard is a premium-quality digital audio adapter with advanced features, studio-quality specs and professional connections. Unmatched in quality, flexibility and expandability, it features 4 tracks of audio sound and real-time digital mixing capability, making it the ideal board for musicians who want digital multitracking and mixing on their PC, or producers looking for a versatile board for post-production digital audio editing and uncompromised audio quality. StudioCard is Windows 95's plug and play compatible plus includes drivers for Windows NT as well.

- Key to StudioCard's amazing sound is the marriage of a low noise analog I/O section and high quality A/D and D/A converters. A PCI-based 32-bit memory mapped board, it delivers less than 0.003% total harmonic distortion and 92dB dynamic range. Plus, a PLL-based sample clock generator that can be locked to an assortment of clock sources.
- Incorporates a programmable 32-bit 40 MHz DSP and pro connections like 4 independent balanced analog I/Os (+4dBu or -10 dBV) and AES/EBU or S/PDIF digital I/O. It also offers a MIDI port with deep buffers and time stamping. No matter which type of equipment you have StudioCard will integrate into standard studio environments.

- Compatible with film, video or MIDI. StudioCard offers synchronization via SMPTE, LTC, MTC, word and pixel clocks, and composite video. Plus, the StudioCard not only reads SMPTE timecode, but generates it as well.
- Unique to the Antex design is StudioCard's multiple adapter capability. This means you can install multiple StudioCards in a single computer for up to 16-track recording. Start with one StudioCard today - add more StudioCards tomorrow. Also included is an on-board SPX expansion connector for plugging in optional daughterboards for compression or enhanced DSP operations.

Minimum Shipping USA (Except AK & HI) \$7.00, up to 3 lbs. Add 60¢ for each additional lb. For ins. add 40¢ per \$100. © 1997 B&H Photo - Video. Prices are valid subject to supplier prices. Not responsible for typographical errors.

... FOR PHOTO & VIDEO "



TO INQUIRE ABOUT YOUR ORDER:
800 221-5743 • 212 807-7479
OR FAX 24 HOURS:
800 947-2215 • 212 366-3738

119 WEST 17TH STREET, NEW YORK, N.Y. 10011
Store & Mail Order Hours:
Sun 10-4:45 • Mon & Tues 9-6 • Wed & Thurs 9-7:15 • Fri 9-1 • Sat Closed
BUSINESS LEASING AVAILABLE



StudioFrame Modular Video Processing System

The Nova StudioFrame Series is a modular, flexible, digital/analog signal processing system. It is designed to efficiently and effectively combine a wide variety of individual function (or processor) boards such as A-D and D-A converters, video signal processors and decoders, audio and video distribution amplifiers and frame synchronizers into more complex function groups, all in one equipment mainframe. The scalable nature of the StudioFrame design allows it to be easily reconfigured and/or upgraded as today's video standards and requirements continue to evolve. The system is based on two rackmount frame models (the SF-3 and SF-1) allowing up to thirteen front loading processor boards and thirteen rear mounted passive interface cards to be accommodated in a single chassis. Both the StudioFrame SF-1 and SF-3 chassis are designed to meet the most stringent broadcast requirements. The SF-3 is a thirteen slot, 3RU chassis while the SF-1 is a 4 slot, 1RU chassis. All studio cards as well as the two chassis' are backed by a two year warranty on parts and labor with guaranteed 24-hour turnaround service. The units are ruggedly constructed to endure studio rackmount, production van and DB (Outside Broadcast) mobile applications. A universal power supply operates at either 110 or 240 VAC, 50/60 cycle. DC operation is optionally available as a redundant supply with automatic switchover. Dual exhaust fans maintain proper airflow and cooling. "Hot swappable" front card loading allows power-on-removal/insertion of individual processing modules without disturbing others in the system. All cabling can remain in place while you service any module. An intelligent "centerplane" provides power, sync, timing and data distribution, facilitating expansion to more complex, more cost-effective signal processing functions.



NovaASD/NovaSDA

Analog to Serial Digital & Serial Digital to Analog Converters

Components of the Nova StudioFrame series, the NovaASD and the NovaSDA incorporate the latest digital video processing techniques for high speed A-D and D-A signal conversion. They are designed to meet the most stringent broadcast requirements and their "hot swappable" front card loading facilitates servicing without disturbing other cards in the system. The NovaASD is ideal for interfacing analog video signals with digital video formats and the NovaSDA for interfacing serial digital signals with existing analog video systems as well as for signal monitoring applications.

SDA-1 Serial Digital Component to Analog Component Converter

- SMPTE 259M 4:2:2 Serial Digital Component (D1) input
- Equalized and relocked serial digital component output
- Analog component video (Y, R-Y, B-Y) (YUV), RGB or RGB/S outputs
- 10-bit D/A converters
- Output level control
- NTSC and PAL compatible

ASD-1 Analog Component to Serial Digital Component Converter

- Analog component video (Y, R-Y, B-Y) (YUV), RGB or RGB/S input
- Dual SMPTE 259M 4:2:2 Serial Digital Component (D1) outputs
- 10-bit D/A converters
- Picture positioning control
- NTSC and PAL compatible

SDA-2 Serial Digital Component to Composite and S-Video Converter

- SMPTE 259M 4:2:2 Serial Digital Component (D1) input
- Equalized and relocked serial digital component output
- Dual composite & dual S-Video outputs
- Color bar output selectable
- 10-bit D/A converters
- Output level control
- NTSC and PAL compatible

ASD-2 Analog Composite and S-Video to Serial Digital Component Converter

- Analog composite and S-Video input
- Dual SMPTE 259M 4:2:2 Serial Digital Component (D1) outputs
- 10-bit D/A converters
- NTSC and PAL compatible

SDA-3 Serial Digital Component to Analog Video Converter

- SMPTE 259M Serial Digital Composite (D2/D3) input
- Equalized and relocked serial digital component output
- Four analog component video outputs
- Color bar output selectable • 10-bit D/A converters

ASD-3 Analog Composite to Serial Digital Component Converter

- Analog composite video input
- Dual SMPTE 259M 4:2:2 Serial Digital Composite (D2/D3) outputs
- 10-bit D/A converters
- Input gain adjustment

NovaMNR Median Noise Reducer

The NovaMNR is a StudioFrame card that eliminates impulse and transmission noise. Cleans up satellite, microwave and fiber feeds and fills in CODEC and time-based corrected videotape drop-outs. It features full bandwidth, uncompressed 10 bit digital processing for ultimate video transparency as well as analog component inputs and outputs.

- Eliminates "sparkles," those black and white dots that sometimes appear on remote video feeds. The NovaMNR incorporates a proprietary adaptive three-dimensional median filter that analyzes pixels from several fields of video and replaces the impulse noise with uncontaminated, clean video.
- Universal drop-out compensation replaces missing video information, whether it is from a time-base corrected VCR source or the decoded output of a CODEC feed. The NovaMNR effectively fills in drop-outs with replacement video from the surrounding fields and previous video field.

NC-8 RGB/Component to Composite/S-Video Encoder

The NC-8 processor module is a 10-bit digital encoder that converts analog RGB or component video input sources into Y/C and composite video. Designed to facilitate multi-form interface requirements, the module incorporates the latest digital video processing techniques along with luminance and chrominance pre-comb filtering to assure the highest quality encoding. A frame of memory is utilized to provide an effective zero insertion delay.

- 10-bit processing, 8-bit D/A conversion
- Zero insertion delay, frame of memory
- Two composite and one S-Video output
- Analog RGB (Sync on Green or all three), RGB/Sync and YUV (Betacam) inputs. Also available with looping inputs
- Variable luminance notch filter
- Y and C pre-comb filtering for maximum encoding performance

- Control's are accessible locally or remotely. A three position threshold switch (off/low/high) adjusts system noise sensitivity while a bypass/operate switch is also included. Both switches are remotely via RJ-11 jack.
- Also available in PAL and PAL-M versions.
- Remote serial control
- Output level control
- Color bar output selectable
- Designed to meet the most stringent broadcast requirements.
- "Hot swappable" front card loading facilitates servicing without disturbing other cards
- Available in PAL and PAL-M versions

NOVAROUTER Intelligent Matrix Routers

NovaRouter is a series of serially controlled audio and video matrix routing switches. These intelligent routers are available in 8x8, 16x16 and 32x32 matrices. They are capable of up to five switching levels to support unlimited combinations of Stereo Audio, Composite Video, Y/C Video, Component Video (Beta or MII), RGB/S and VGA Graphics. Audio follow video or breakaway routing is controlled by very intuitive computer software or optional XY control panels.

The computer software and VGA display provides quick visualization of all crosspoints and facilitates routing operations. An unlimited number of switching configurations may be stored and recalled at the click of a mouse. User defined labels for all sources and destinations provide positive identification of the matrix status. One computer can control several NovaRouter Systems for multiple studio or large presentation system applications.

The optional, easy to use, XY control panels provide routing functions for basic systems without the use of a computer interface. All video, audio and audio follow video switching functions are controlled by source select and destination select switches. Changing and verifying the matrix configuration is simple and clear. The XY controls may be front panel mounted or are available as a remote control unit.

Broadcast quality audio and video processing and microprocessor control ensure superior quality and performance. Yet, the simplicity and modular configurations of NovaRouters™ make them economical for broadcast, production, cable TV, graphics, presentation, teleconference and educational applications.



- 8x8, 16x16 and 32x32 switching matrices
- Stereo audio, composite video, Y/C, component video, RGB/S and VGA
- Up to five (5) levels of switching
- Audio follow video and audio break away
- Serial control via intuitive computer software or optional XY control units
- Computer VGA monitor display provides quick visualization of all crosspoints
- Easy single "click" mouse switching control
- User labeling of sources and destinations
- Store system configurations in memories
- Multiple locations can be controlled from one computer
- Push-button XY control options, front panel mount or remote control units
- Audio and video modules provide easy system upgrade

VIDEONICS

Animated Postscript Character and Graphics Generator

POWERScript

The most advanced character generator ever designed for video production, multimedia and industrial applications, PowerScript delivers the huge range of titles and graphics supported by PostScript display technology, plus animation, effects, transparency and color keying. It features two GPI inputs, anti-aliased, 17.5 ns (nanosecond) pixel resolution and 4:2:2 broadcast-quality video. It also offers high-speed RISC processing to provide real-time Level 2 PostScript imaging and fast rendering—even with the most complex images. The PowerScript works stand-alone or with a computer, has a built-in TBC, offers a powerful and intuitive interface, and is suitable for the desktop or can be rackmounted.

Powerful Character Generator

- Choose from 35 built-in fonts or download PostScript fonts from your PC. PowerScript's high-speed RISC processor provides real-time PostScript imaging.
- Characters can be rotated at any angle, scaled to any size, stretched horizontally or vertically.
- Styles include variable bold and italic, underline and shadow (drop shadow, variable displacement and opacity). Each character can be adjusted separately.
- Text can be positioned anywhere on the screen or automatically centered, vertically or horizontally. Left, right, top, bottom and center justification is also provided.
- Characters are automatically kerned, using the font's standard kerning information. Spacing is highly flexible with variable word and letter spacing and line spacing (leading).
- Built-in real-time object-based drawing tool and text editor—no computer or software required. Design can be done ahead of time and displayed later, or can be done on the fly.
- Supplied keyboard and mouse are used with easy on-screen menus to place and modify graphics and text.
- Change fonts, colors, and other characters instantly.

Transparency and Colors

- Characters can be made transparent (0-100%) over video, other characters and graphics with 64 levels of transparency.
- Opaque characters can use over 4,000,000 colors. Transparent characters can use over 8,000.
- Different colors can be used for fill and outline (variable width) as well as each letter and each graphic.

Roll, Scrawl, Animation, Effects

- Variable speed roll, crawl and push (slide) in all directions.
- Every text object, graphic and logo can be animated. Complex animations include having elements follow paths, bounce, etc.
- Elements can change outline and/or fill color, transparency, position as they move and results are displayed in real time.
- Move individual characters in different directions; make colors change, flash words; make letters and words bounce; spin a letter across the screen. Use fades and wipes to transition between titles and video or between two pages of titles.

Backgrounds and Graphics

- Titles can be placed on solid color, patterned or graduated backgrounds, or they can be genlocked to incoming video.
- Lines, squares, rectangles, ovals and circles can be created and placed anywhere on the screen. Each graphic object can use a different color, transparency, rotation, size, fill and outline.

Imported Logos and Graphics

- Accepts most PostScript or PCX format graphics without modification. Imported images can be any size and can be scaled, skewed, and rotated when placed on screen. Transparency and anti-aliasing can be defined when graphics are generated.

Expansion Capabilities

- Although PowerScript operates on its own, you can still add peripherals and connect to a computer or network. Two PC-card slots allow the addition of non-volatile flash-ram and Ethernet cards. RS-232 port allows connection to desktop computers for added storage and downloading of fonts or graphics from a PC.



LEADER

Manufacturing test and measurement equipment for over 40 years, Leader Instruments is the standard which others are measured against for reliability, performance, and most important—cost effectiveness. Before a product is brought to market, an exceptional degree of energy and effort go into its design. Prototypes are built and tested to withstand environmental and other factors far exceeding actual operating conditions. These include high humidity, extremes of heat, cold, shock and vibration. Manufacturing quality is built in every step of the way and only the finest parts are used. At each production run, subassemblies are separately tested before they are integrated into the finished product, then each product is tested again. This is why less than half of 1% of all Leader products are ever returned for warranty repair or adjustment.

5860C WAVEFORM MONITOR

A two-input waveform monitor, the 5860C features 1H, 1V, 2H, 2V, 1 s/div and 2V mag time bases as well as vertical amplifier response choices of flat, IRE (low pass), chroma and DIF-STEP. The latter facilitates easy checks of luminance linearity using the staircase signal. A PIX MON output jack feeds observed (A or B) signals to a picture monitor, and the unit accepts an external sync reference. Built-in calibrator and on-off control of the DC restorer is also provided.

5850C VECTORSCOPE

The ideal companion for the 5860C Waveform Monitor, the 5850C adds simultaneous side-by-side waveform and vector monitoring. Featured is an electronically-generated vector scale that precludes the need for fussy centering adjustments and eases phase adjustments from relatively long viewing distances. Provision is made for selecting the phase reference from either A or B inputs or a separate external timing reference.

5100 4-Channel Component / Composite WAVEFORM

The 5100 handles three channels of component signals, plus a fourth channel for composite signals, in mixed component / composite facilities. Features are overlaid and parade waveform displays, component vector displays, and automatic bow-tie or "shark fin" displays for timing checks. Menu-driven options select format (525/60, 625/50, and 1125/60 HDTV), full line-select, vector calibration, preset front-panel setups and more. On-screen readout of scan rates, line-select, preset numbers, trigger source, cursor time and volts.

5870 Waveform/Vectorscope w/SCH and Line Select

A two-channel waveform/vector monitor, the microprocessor-run 5870 permits overlaid waveform and vector displays, as well as overlaid A and B inputs for precision amplitude and timing/phase matching. Use of decoded R-Y allows relatively high-resolution DG and DP measurements. The 5870 adds a precision SCH measurement with on-screen numerical readout of error with an analog display of SCH error over field and line times. Full-raster line select is also featured with on-screen readout of selected lines, a strobe on the PIX MON output signal to highlight the selected line, and presets for up to nine lines for routine checks.

5872A Combination Waveform/Vectorscope

Models 5872A offers all the operating advantages of the 5870, except for the following: SCH is deleted from the 5872A (line select retained), making it ideal for satellite work.

5864A Waveform Monitor

A two-input waveform monitor that offers full monitoring facilities for cameras, VCRs and video transmission links. The 5864A offers front panel selection of A or B inputs, the choice of 2H or 2V display with sweep magnification, and flat frequency response or the insertion of an IRE filter. In addition, a switchable gain boost of X4 magnifies setup to 30 IRE units, and a dashed graticule line at 30 units on screen facilitates easy setting of master pedestal. Intensity and focus are fixed and automatic for optimum display. Supplied with an instruction manual and DC power cable.

5854 Vectorscope

A dual channel compact vectorscope, the 5854 provides precision checkout of camera encoders and camera balance, as well as the means for precise genlock adjustments for two or more video sources. Front panel controls choose between A and B inputs for display and between A and B for decoder reference. Gain is fixed or variable, with front panel controls for gain and phase adjustments. A gain boost of 5X facilitates precise camera balance adjustments in the field. Supplied with a DC power cable.

Designed for EFP and ENG (electronic field production and electronic news gathering) operations, they feature compact size, light weight and 12 V DC power operation. Thus full monitoring facilities can be carried into the field and powered from NP-1 batteries, battery belts and vehicle power. Careful thought has been given to the reduction of operating controls to facilitate the maximum in monitoring options with the operating simplicity demanded in field work.

ALL ORDERS SHIPPED WITHIN 24 HOURS

Circle (164) on Free Info Card

www.americanradiohistory.com



Panel antennas, such as this digital-ready UHF antenna, may be used for a variety of DTV installations, many of which will be directional. (Cutaway photo courtesy of Elettronica Industriale, Italy.)

For VHF television, the limit is 10dB. Another of life's mysteries. An antenna between 82 and 88MHz is different than one at 88.1MHz.

One big area that is treated too lightly is beam tilt and null fill. These are treated with "rule-of-thumb" numbers far too often. A good RF engineer must always look at the market location and terrain as significant factors in the antenna design.

First, beam tilt must be used on tall towers or buildings to keep the signal on the ground. A high gain antenna on a 1,500-foot-tower with no beam tilt will send a great majority of the transmitted signal out into space. Beam tilt must be used to bring the signal to the ground before the horizon, placing the signal where it will be used; albeit at the sacrifice of service to the space shuttle.

Engineers have long worked with

simple terms like "10% first null fill" or something comparable as an easy way to treat nulls below the main lobe. However, the manufacturers have developed the ability to shape the underside of the main lobe thanks to the convenience of computer-aided analysis and design. This allows weak signal areas close to the site to be avoided. For example, one design on a Midwest station resulted in a 10dB improvement in the downtown area, which happened to be in a river valley near the site. So remember, antennas are directional in the vertical plane just as in the horizontal plane. No reasonable design treats only the horizontal plane, especially on high towers with high gain antennas.

Incorporating a directional antenna, along with beam tilt and lobe shaping, into a system design should be done in close cooperation with the station's consulting engineer and with the desired manufacturer. Remember, this part must be done right before the antenna is installed. It is a real dog of a problem to try to change the H and V patterns after installation. ■

Don Markley is president of D.L. Markley and Associates, Peoria, IL.

transition to digital

Continued from page 16

a single color space (Y, Cr, Cb), a limited range of resolutions and compression ratios, and has built-in mechanisms for handling audio.

- MPEG takes advantage of the high degree of commonality between pictures in a video stream, and the predictable nature of movement (interpicture encoding).
- MPEG provides for a constant bit rate through adjustable variables, making the format predictable with regard to bandwidth requirements.
- MPEG specifies the syntax for storing and transmitting compressed data and defines the decoding process. The standard does not, however, specify how encoding should be performed. Such implementation considerations are left to the manufacturers of encoding systems. Still, all conforming encoders must produce valid MPEG bitstreams decompressable by any MPEG decoder. This approach is one of the strengths of the MPEG standard. Allowing encoders to use proprietary, but compliant, algorithms means that a variety of implementations are possible and — indeed — encouraged.

The collection of MPEG standards includes:

- MPEG-1, the original implementation, targeted at multimedia uses. The MPEG-1 algorithm is intended for compact disc bit rates of approximately 1.5Mb/s to 2Mb/s. MPEG-1 supports 525- and 625-type signal structures in progressive form with 204/288 lines per frame, sequential-scan frame rates of 29.97 and 25 per second and 352 pixels per line. The coding of high-motion signals does not produce particularly good

results, however. As the bit rate is reduced (compression increased), the output video quality gradually declines. The overall bit-rate reduction ratios achievable are about 6:1 with a bit-rate of 6Mb/s and 200:1 at 1.5Mb/s. The MPEG-1 system is not symmetrical; the compression side is more complex and expensive than the decompression process, making the system ideal for broadcast-type applications where there are far more decoders than encoders

- MPEG-2, offers full CCIR-601 resolution. Most MPEG development at this time focuses on this standard, which incorporates interlaced video capabilities.
- MPEG-3 was originally targeted at high-definition imaging applications. Subsequent to development of the standard, however, key specifications of MPEG-3 were absorbed into MPEG-2. Thus, MPEG-3 is no longer in use.
- MPEG-4 is a new standard currently under development. It uses extremely low bit rates for teleconferencing and related applications requiring high bit efficiency.

Next month we will look at MPEG-2 in more detail, focusing on the performance profiles available, and their practical applications in the real world. ■

Editor's note: Portions of this section were adapted from: G. Lakhani, "Video Compression Techniques and Standards," in The Electronics Handbook, J. C. Whitaker ed., Chapter. 84, pp. 1,273-1,282, CRC Press, Boca Raton, FL, 1996. Used with permission.

Jerry Whitaker is a consulting editor for Broadcast Engineering magazine.

BIG NEWS COMES IN THREES

Signs of Primitive Life on Mars Found in Meteorites

British researchers
confirm US findings

LARCAN Debuts LANDMARK DTV Transmitter at NAB '97

"New from the ground up" product
impresses crowds at booth 9953

Adult Mammal Cloned for the First Time

Scientists are anything but
sheepish about the possibilities

LARCAN

A MEMBER OF THE  **LBIANC** COMMUNICATIONS GROUP

650 South Taylor Avenue Louisville, Colorado 80027 Tel: 303-665-8000 Fax: 303-673-9900
228 Ambassador Drive Mississauga, Ontario Canada L5T 2J2 Tel: 905-564-9222 Fax: 905-564-9244

Circle (157) on Free Info Card

www.americanradiohistory.com

CNNfn implements the latest in graphics technology

CNNfn's planners decided to trailblaze the technological frontier in equipping the new graphics facility for the first all-digital network. Since CNNfn was the first network to launch on television and the web (www.cnnfn.com), we needed to develop an efficient and flexible system accessible to the web site and on-air designers, so we could easily execute our visual mission.

CNN's technical development director and graphics production director had two primary goals as key members of the planning team: to integrate all graphics equipment on a single network, making files universally accessible; and to stay in the digital realm all the way through the control room. After careful planning, lots of trial and error, plenty of long hours and invaluable creative input from CNNfn's graphics department, a fully-networked, all-digital graphics operation was developed.

CNNfn designed an integrated system for television and the web using equipment from Chyron, Silicon Graphics, Apple and Comunicacion Integral Consultores (CIC) in Spain. Liberty v5.5 paint software is running on three Silicon Graphics Indigo2 XZ workstations with Galileo Video 601 boxes. On the network, Chyron INFiNiT!, MAXINE! character generator and ImageStore! still-store supply on-air graphics.

For non-linear editing and compositing, a Jaleo Composite 2.5 digital post-production and editing software from Comunicacion Integral Consultores were employed. Jaleo runs on two of the three SGIs. CNNfn also has six Mac 8500s and two Mac 9500s fully loaded with multimedia and graphic-design software. Trading files between the Macs and SGIs is a transparent process with Xiner's K-Ashare file trading software.

Having an open architecture system like the SGI allows CNNfn to use Liberty almost seamlessly with its main compositing tool, Jaleo Composite. Two produc-

tion designers had worked with these systems prior to being hired, and their experience has proved invaluable to the department.

As most designers concede, certain features of all software endear themselves to users. CNNfn's designers typically use Liberty to roto-scope video frames with the image adjust and image correct tools, create text and other complex mattes, and then import the files in Liberty's native .im format to Jaleo. Jaleo's unlimited layering and considerable editing capabilities are then used to create Harry-like effects for the stations animated show and segment opens. Because all systems operate from one workstation, it's an efficient setup for the designers.

The fact that CNNfn's system is digital all the way through to the control room ensures that graphic quality is technically of the highest quality. Keeping all graphic projects in-house has allowed CNNfn to keep the network's visual look consistent on television and online, and also in set design, marketing

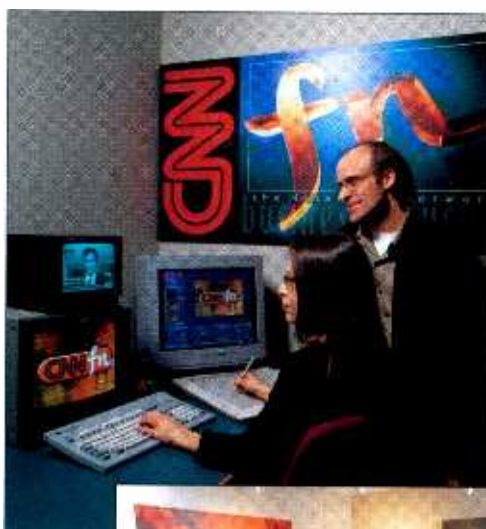
pieces and other collateral materials. ■

Mark Creel is production design director for CNNfn.

Editor's note: Field Reports are an exclusive Broadcast Engineering feature for broadcasters. Each report is prepared by well-qualified staff at a broadcast, production or consulting company.

The reports are performed by the industry, for the industry. Manufacturer's support is limited to providing loan equipment and to aiding the author if requested.

It is the responsibility of Broadcast Engineering to publish the results of any device tested, positive or negative. No report should be considered an endorsement or disapproval by Broadcast Engineering magazine.



CNNfn's fully networked, all-digital system puts a library of effects in one workstation.

Avid Technologies' Media Composer

Frontline, an Emmy-award winning public-affairs documentary series produced at WGBH, Boston, is currently in the process of retooling its post-production processes to create a completely non-linear model centered on the Avid Media Composer system. Most of the 35 hours of programming *Frontline* airs in each nine-month season was previously off-lined with non-linear systems and on-lined in a linear tape-based environment.

Where to begin

An examination of post-production for the unpackaged documentaries showed that the average cost of using a tape-based on-line process was more than \$8,000 per finished hour. That number could be reduced to around \$3,000 per finished hour by moving to a digital non-linear finishing environment. At the same time, *Frontline* would gain greater control over how well the program met technical specifications for program quality. Video and audio could be brought into the system during digitization, rather than trying to fix problems on a tape created in another facility not able to meet specs.

Time could also be saved in the creation of *Frontline* promos. Promo elements were already being off-lined and on-lined on a non-linear system, but were always output to tape and packaged conventionally. This seemed to be an unnecessary redundancy in the process.

Additional efficiency could be achieved in the packaging process by making it easier to edit programs to exact duration, and by reducing the redundancy inherent in linear packaging. The packaging elements that are used in every piece are created once and remain on the drives. They are instantly available to the final program without having to be laid in each time, and can easily be modified when necessary to adjust the program's finished length.

The next step

Once the fundamental analysis was complete, a new workflow was created based on the desire to keep the programs in one non-linear format from start to finish. In the new workflow, documentary producers deliver their source tapes and either a Media Composer sequence or an EDL, from which a video-only on-line of the documentary is performed. In another suite, on a

different schedule, the promos and other elements are off-lined and then on-lined.

Getting to air

In the final week before a program airs, all of its media is moved into the packaging suite, edited together and cut to duration. Several versions (clean unpackaged documentary, packaged documentary with titles, and international master) are then created by copying and modifying the sequence. Only then is it output to tape.

In all, this new completely non-linear model provides numerous advantages. Keeping each piece of the program in the Avid Media Composer format throughout



A member of *Frontline's* production staff with the Avid Media Composer.

the process reduces redundancy, maintains a uniform technical standard and eliminates output to tape until the program is complete. It allows complete flexibility in packaging to adjust duration and make changes. And, most importantly, it dramatically reduces costs. ■

Tim Mangini is the post-production director for the PBS weekly TV series Frontline.

Editor's note: Field Reports are an exclusive Broadcast Engineering feature for broadcasters. Each report is prepared by well-qualified staff at a broadcast, production or consulting company.

The reports are performed by the industry, for the industry. Manufacturer's support is limited to providing loan equipment and to aiding the author if requested.

It is the responsibility of Broadcast Engineering to publish the results of any device tested, positive or negative. No report should be considered an endorsement or disapproval by Broadcast Engineering magazine.

The video disk game: A technology perspective

It seems that everybody is playing with the idea of recording on disks these days. Modern disk recorders do rely on emerging technologies, but the basic capability has been around for longer than you might think. It may surprise you to hear that the first video disk recorder was in production in the late 1960s. In a product called the HS-100, Ampex recorded analog signals on an 18-inch platter to provide the first slow-motion replay systems.

Today, recording video on disks has become the “de rigueur” thing to do. Videotape recorders are slow,

that everyone follows (in most cases). Many other issues have a much greater impact on what you get when you buy a disk recorder. A simple decision like whether you can live with compression has a huge impact on the entire design of these products. And, if you can, how much and what type of compression also greatly impacts the design, not to mention the price you’ll pay to get it.

Capacity is king

The largest cost determinant of a long-format disk recorder is the amount of storage provided. I have to qualify that statement — not time capacity, but bytes of capacity. In the most compressed short-form recorders, the cost of disks is always the biggest single factor in building a disk recorder. Compression is closely tied into capacity in a simple linear relationship: If you are using a 6:1 compressed system, you can put six times more pictures into that number of bytes of storage than you would without compression. But compression is not always appropriate; its applications are discussed later.

The cost of disk storage is falling rapidly. A computer industry rule of thumb is “double the capacity at the same price every 18 to 24 months” and drive manufacturers continue to make good on that promise. What’s happening, however, is people in our industry are wanting longer times more than they want cheaper disk recorders. At the leading edge we see costs of comparable VTRs and disk recorders crossing over. For the same dollars you’d spend on a digital VTR, you can buy a high-quality disk recorder with the same range of capacity (somewhere from 20 minutes to an hour). If you work that out, it’s about three to four thousand dollars a minute, and the trend in drive cost along with ever greater levels of integration will continue to make disk recording even cheaper.

The lesson here is to pay careful attention to how much disk is in a box when considering the value of what you’re getting. Always find out how much real storage you’re buying and don’t rely on estimated storage times.

Bandwidth is queen

The second biggest factor in the cost of building a disk recorder is its aggregate bandwidth capacity. This is a value that is frequently confusing to determine, but is important to understand. You’ll pay for it whether you understand it or not.

It seems simple — if it’s a 601 device, it’s 270Mb/s in



Pluto Technologies' Space DDR.

expensive to purchase and to maintain, and they usually degrade your pictures. So, many video professionals are looking for suitable alternatives wherever possible. And choices for recording on disk grow by leaps and bounds.

Specifications set the stage

If you’re confused by a choice of some 40 different products to solve your recording needs, you should see what kinds of choices manufacturers confront in deciding just what to build. Each product is intended to meet a set of specifications at the lowest possible cost. It’s really the specs that drive the architecture that is used for each approach. Those specs are also what end-users should be paying attention to in making their disk-recording selection.

By specifications, I’m not referring to traditional specs like return loss and signal-to-noise, but rather to storage time, compression levels, number of outputs and transport performance. Most of the traditional analog video specs are closely tied to the CCIR-601 digital video spec

and 270Mb/s out — that must be its bandwidth, right? Well, sometimes, but more often not. It's important to distinguish between this data rate and the actual internal bandwidth of the device. Compression is the first and most obvious factor in this equation. If you are compressing at 3:1, your bandwidth is only one third of that 601 rate. This goes for disk recorders and VTRs, as well. The Sony Digital Betacam can't come anywhere near 270Mb/s — it can only lay down less than 100Mb/s onto tape, being compressed somewhere between 2:1 and 3:1. And compression relates linearly to bandwidth just the same way it impacts capacity.

Let's take a moderate-performance hypothetical disk drive that provides a 5MB/s transfer rate. It is a simple matter to divide video up and save little bits of it merry-go-round fashion on several drives to multiply the bandwidth. This is called "striping data" and is the basis of all RAID systems. To perform a full-bandwidth recording, we would need something like seven of these drives (seven drives x 5MB/s x 8b/B = 280Mb/s). Because of system overheads including drive seek times, sector latencies, SCSI bus activity, CPU processing times and other system delays, we might not actually achieve this but, hey, this is hypothetical. OK, so take eight drives as a realistic number. If we compress 2:1, we only need four drives. And not only do those four drives provide enough bandwidth at 2:1, they also provide the same amount of recording time as the eight-drive full-bandwidth system.

As long as we're recording or playing along at normal speed, that simple math provides a good estimate of disk bandwidth needed. But as soon as you expect disks to perform like a VTR and play at other speeds, we need more disk performance. Let's look at the case of playing at 2x normal play speed. If you want to do this right (not every disk recorder does) and if you take a brute force approach, traversing twice as much media means you need to pull twice as much data off your disks as you would at 1x. It turns out that, if you know how big a video frame is, you don't need to be a brute about it because you know how far ahead to jump to get your next frame. But the real penalty is that you're now no longer doing sequential reads on each drive and that the 5MB/s number the drive manufacturer so confidently quotes falls to pieces: Pluto's drive testing, on average, shows that some of the best drives available lose half their data transfer rate ability when they are asked to provide even large blocks of data from random locations.

At most rates other than normal play, disk accesses become more random and performance problems become noticeable. Slow-motion operation, reverse play,

even shuttling require lots more performance from the disk array. This is why the visual effect of shuttling most disk systems looks like a strobe light. In non-sequential accesses, most disk recorders can't find the right frame to display in time, so they display the old one until they're ready for the next — often for three or more frames of hold.

The right way to do off-speed playback is not to just display the right frame, but rather the right field at the right time. Pick the most temporally correct field to be displayed at the correct instant in time. This requires dealing with the case where you have an even field when an odd one is called for. Many disk recorders allow the scene to

jump up and down a line at each field swap. Properly done, spacial interpolation is required; the Pluto SPACE recorder uses ADO-style filters to achieve this. Not only is this the only way to play at variable speeds correctly, it's the only way to do transparent fit and fill in an editing environment or time compression in a broadcast environment. Not every operation needs this, but if you are looking for a disk recorder for this kind of application,

**At most rates other than normal play,
disk accesses become more random
and performance problems become
noticeable.**

**The
UltraGraphix
ULTRA Weather
Workstation™**

Now
used
by
CNN



**You Have
To See It
To
Believe
It!**

**Experience a
hands-on demo
at NAB
Booth #10564**

FAST- Create your show in
less than 30 minutes

EASY TO USE- Intuitive,
single integrated program

AFFORDABLE- With new SGI O²
platform, it is priced for stations in any market

Cut your show production time by 86%
Call 800-566-6606

ACCU WEATHER®
The World's Weather Leader™

619 W. College Avenue, State College, PA 16801
Call 800-566-6606 • Fax 814-231-0453
E-mail info@accuwx.com
Internet <http://www.accuweather.com>



2 © 1997 AccuWeather, Inc.

Circle (158) on Free Info Card

you ought to look closely at how well it performs under these demands.

Another bandwidth capacity factor to consider arises when we start to take advantage of the fact that this is disk, not tape. That is, to treat it non-linearly and take advantage of its presumed random access capability. Whether you consider a commercial spot playlist or an edit segment list, the concept is the same. Take scattered video clips from a recorded unorganized collection on disk, and try to make them play as a seamless single clip. It sounds easy, but turns out to be surprisingly tricky. Especially as the individual segments get short and close together. The ultimate example of this is the "MTV-style" unlimited back-to-back frame or even field edits. This demands full random access performance of every disk and in effect at least doubles the aggregate bandwidth disk performance requirement for that playout.

Compression, off-speed playback and non-linear applications are all factors determining the needed system aggregate bandwidth. When a manufacturer designs a disk recorder these are major determinants of how much disk performance to use and how big a data pipe to build. But wait, there's more. One final, and certainly one of the most significant, bandwidth eaters is the number of simultaneous streams.

I/O is the joker

The simple case for I/O is the old-fashioned VTR. Play or record, one at a time. One in or one out. One stream. The number of simultaneous streams expected from a disk recorder is a direct multiplier of the required bandwidth capacity.

I frequently get asked if my disk recorder can do "pre-read" like a D-2 VTR. It seems everyone likes the ability to pull video off tape, crunch on it some, and then record right over the source. This is pretty simple stuff on a VTR. There are separate record and playback heads, each with their own independent paths. As the scanner spins, the data is read off and a quarter turn later written back. But on a disk-based system, even though there may be separate paths through the video I/O, it all has to go through a single pipe that connects to the disk array. In disk recorders, pre-reading, read-before-write, full-duplex, whatever you want to call it — requires a full two times the bandwidth of a single stream from the disk array.

The next step beyond duplex operation is the whole class of multichannel disk recorders. A Tektronix Profile provides four independent streams simultaneously from its array. At the output, that's 4 x 270Mb/s or more than a gigabit per second of data. If they didn't compress, that would require four times as many disk drives and a much faster databus to move that information around. It is not at all surprising then that the Profile compresses at least 4:1, requiring no more bandwidth than a single stream of uncompressed video.

This is not to say that nobody is moving that much information at a time. There are high-end solutions

that can spew a ton of data. The Quantel ClipBox can provide up to eight uncompressed full-bandwidth-independent simultaneous streams. The Philips BTS Media Pool can provide up to 12 and is architected to be able to do even more. Because today's fastest databuses can't begin to handle these data rates, it is impossible to achieve this with a single box. The way they do this is to create an "array of arrays." Each individual array can handle only a single full-bandwidth stream, but by putting only a small piece of each stream on each array, they multiply the whole system's bandwidth. This is a similar way of spreading out bandwidth demand to striping across disks within an array. The benefit of doing this is superior aggregate bandwidth capacity. The downfall is an increased potential for data loss and the exorbitant cost of building such systems.

Compression aces cost

All of the items listed above are consumers of bandwidth. Compression has the opposite effect, but every implementation in use today degrades the picture to some extent. The more you compress, the bigger the penalty you pay in reduced picture quality. The two main compression techniques are MPEG and JPEG. The choice between these has ramifications for disk recorders.

MPEG, with its 30:1 usable compression ratio, knocks the huge bandwidths of uncompressed video down to where it requires few drives to accommodate. And long pieces of media easily fit in small amounts of storage. When scaled back to 20:1 or 15:1 it can even look good by studio standards, although it is hard to edit in studio applications. But editing aside, MPEG has this real problem — it is asymmetrical (sometimes called non-complementary). That is, even though decoders can be built inexpensively, encoders are still complex and expensive. New silicon is emerging that greatly reduces this cost, but not enough to make it practical in disk recorders unless many streams are involved. Disk recorders like the Hewlett-Packard Media Stream video server or the Sony VideoStore can offer as many as 12 streams using MPEG compression. The input encode side is expensive, but its cost gets divided across many output streams.

Most disk recorders use the JPEG technique, which relies on Discrete Cosine Transform (DCT) compression. Some of these devices have variable compression and some are fixed, but DCT works well up to between 4:1 and 8:1. There are actually a lot of variables in every implementation. Quantization tables and bit-rate control strategies are significant details that vary from unit to unit. Some manufacturers' JPEG looks better than others at the same data rates. And, a given compression rate may look just fine on some source material and horrible on others.

Digital Betacam uses a DCT compression technique and is considered to be transparent at somewhere below 3:1 and, in many cases, it is. But on some source material, even that mild amount of compression is

obvious. Hard edges leading into soft blends, typical of computer graphics, are an example of the kind of media that can show off the warts in any compression system. If a disk system is to be used in a computer graphics application, full bandwidth is the only way to create high-end results. Even eight bits of precision is often not enough for long blends to appear clean and unband-ed. This is a case where a strong argument can be made for 10-bit uncompressed performance.

If a disk system finds its way into a post-production suite where digital effects, multiple layers and subtle keys are needed, anything less than full bandwidth causes a form of generation loss. Multiplying keys into a background is another example of where 10-bit performance can pay off. This kind of application used to be the exclusive domain of parallel transfer drive systems like the Accom RTD and the Abekas A66. As disk and array technology has evolved, longer time/ lower-cost boxes are starting to move into the on-line edit suite. Products like Sierra Design Labs QuickFrame and Pluto's own SPACE Digital video recorder are examples of products that can serve in the post-production world.

There are times when even uncompressed 601 isn't good enough and compression is out of the question. When images are pulled off of a Telecine and need to be color-corrected or "panned and scanned" every morsel of available data needs to be preserved. In simple terms, the math that gets applied to each pixel requires extra precision to yield results that fully use the 4:2:2 data format when all is done. This is where you need the opposite of compression — oversampling. Gather and record more data about each pixel than you will ultimately need for the final result so that upstream processing doesn't end up creating a worse picture than 601 is capable of. SPACE and a few other full-bandwidth recorders can be strapped together to provide bigger samples carried in multiple streams. An example is recording 4:4:4 (comprised of a 4:2:2 stream and a half bandwidth 0:2:2).

Compressed solutions tend to make more sense for off-line applications and those applications after the production process has been completed. When a disk recorder is to be used upstream in the production process, it will pay to keep as much quality as possible so that subsequent processing doesn't further degrade what you created.

Reliability jacks up the price

The reliability of a disk recorder often does not relate to its performance in any way, but it is likely to be related to its cost. Medium-priced disk systems may have the lowest reliability. Low-cost disk recorders using one or two drives and minimal electronics tend to sport fairly

high reliability figures due to their simplicity. As more drives are added, the complexity of the system increases and with it, the potential for failure. As systems grow, at some point it begins to make sense to provide some level of failure protection. But with that protection comes added cost. Large systems become so complex that the

probability of some kind of failure is high, mandating sophisticated measures to provide adequate reliability.

Any array of drives can be called a RAID because the original definition includes RAID level 0,

which is striped data with no redundancy. Technically speaking, this is not RAID and has been better described as JBOD (Just a Bunch Of Disks). Lose one drive and all the data on the rest of the drives is lost forever. Many manufacturers are now putting true redundancy into their products, but most can withstand only a single drive failure and still keep data intact. It becomes important to be able to quickly replace the broken drive without disassembly and rebuild the missing data before a second failure takes out the remaining data. Issues like hot swap capability for the drives and data-rebuilding strategies are important for systems in broadcast origina-

One other point to keep in mind about RAID is the issue of just what is protected.

**QUALITY.
RELIABILITY.
EASE OF OPERATION.**

ENG, SNV and EFP trucks, vans, trailers

BAF Broadcast Vehicles

TOLL FREE 800-633-8223 WEB bafcom.com
FAX 407-324-7860 E-MAIL baf@gate.net

Circle (159) on Free Info Card

March 1997 **Broadcast Engineering**

tion applications.

One other point to keep in mind about RAID is the issue of just what is protected. Most RAID-protection schemes cover just the media data. But many disk recorders have an additional disk drive for the controlling computer to keep its own data — things like the operating system and the media file system. It is rare that this ancillary information is RAID-protected as well, though losing it can take you down as quickly as any failure in the media storage. In some products, losing the file system alone can cause an unrecoverable loss of all the RAID-protected information. The Pluto disk recorder keeps all this information in RAID along with the media, but few other disk systems do this. If you think you are buying a system with RAID protection, make sure you are aware of what is and what isn't protected.

A number of subtle reliability issues are becoming more important as drive reliabilities improve. Power supplies and fans are also important to reliable operation. Given the actual probabilities, current sharing, redundant power and live swap capabilities now should be considered as important as RAID when looking at system reliability. Also, consider the importance of monitoring system operating temperature. If there is no reporting to the user when cooling is impaired, any array of hard disks can become a really good toaster oven. Pluto's product monitors fan speed and box

temperature to assure reliable operation.

Really big systems are failure prone. In most systems there are single points where a failure will kill the output no matter what strategies are in place to protect against that eventuality. One final strategy to avoid drastic results is "don't put all your eggs in one basket."

I/O part deuce

We've talked about I/O in terms of number of streams, but there are other important I/O issues. Another factor to consider with I/O is that of format. Most disk recorders function in a CCIR-601 world. Because this is the emerging standard for all professional production, it makes eminent sense to keep the data in that format most of the time.

However, if a disk recorder will be used in the analog domain, analog I/O must be provided or the cost of converters should be added to the purchase price. The Drastic Technologies VVCR and ForA's Epique are examples of disk recorders that come with built-in composite analog video I/O. D-2-style digital composite video takes about half the bandwidth and disk space. The original Abekas A62 and the current MountainGate VDR are examples of disk recorders that can actually record a composite video stream.

If a disk recorder is only to be used in conjunction with a computer, any form of video I/O may be unnecessary. When the computer itself has video I/O or the output is to be networked to some giant SGI Onyx, CCIR-601 connections may not even need to be provided. Such notable disk recorders as the various Ciprico series are examples of disk recorders without video I/O all together.

Although serial digital video I/Os will serve most applications, traditional analog monitoring outputs can be helpful. If they are to be used in traditional VTR-type applications, a burn-in time-code display may also be important.

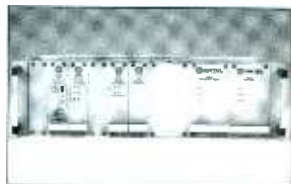
Speaking of which, don't forget about time code. Many disk recorders don't handle VITC and LTC and those that do, may be too inflexible to be easily integrated into your facility. Internal time-code reader/generators and selectable VITC lines are rare in disk recorders and can cause real headaches when it comes time to actually use it in a real-world situation.

Audio I/O is another area where you should be aware of exactly what's provided. Many disk recorders do not use the AES 48kHz sample rate or the 20- or 24-bit sample size. Some disk recorders offer audio in a separate chassis, which may not be RAID-protected and some don't offer audio at all. Consider, as well, what happens to audio at other than normal playback speeds. Providing off-speed video capabilities does not imply the same for audio. Ask if you can scrub audio as you can on an analog machine. Can you set levels or assign channels? Can the device re-sample, accommodate different sample rates and does it provide analog monitoring outputs?

Fiberoptic Interfacility Links for Satellite Earth Stations

- **From Low Cost to High Performance**

- **Cost-Effective Alternative to Coax**



- **Indoor or Outdoor Mounting**

- **Provides Electrical Isolation**



- **Easy to Install**

- **Widely Used-Field Proven**



**2015 West Chestnut Street
Alhambra, California 91803
(818) 281-3636 • Fax (818) 281-8231
(800)362-3891**

Circle (160) on Free Info Card

Computer and control I/O is the last area of disk recorder connections to consider. The vast majority of disk recorders have an RS-422 connector for control and emulate the industry-standard BVW-75 protocol. Just because it talks like a Sony, doesn't mean you can edit with it like a Sony. If you want to use a disk system for non-linear applications, the Sony protocol doesn't provide enough commands to handle that.

And few standards exist that do handle non-linear. Assuming you've found a disk system that supports a non-linear protocol, make sure your edit controller can take advantage of it.

Then there is the need for faster computer connections. Ethernet (10BaseT) 10MHz connections are provided on many boxes and 100MHz (100BaseT) is on some of the newer ones, but look beyond the connector. Sometimes, Ethernet is only for control, sometimes it runs proprietary protocols and requires special software on your computer to use it. Look for the ability to transfer media over this network and look for standard protocol stacks like TCP/IP. For those really big file transfers, look for direct SCSI connec-

tions, Fibre Channel and FireWire networking and Serial HIPPI to move large amounts of data from the recorder to other places.

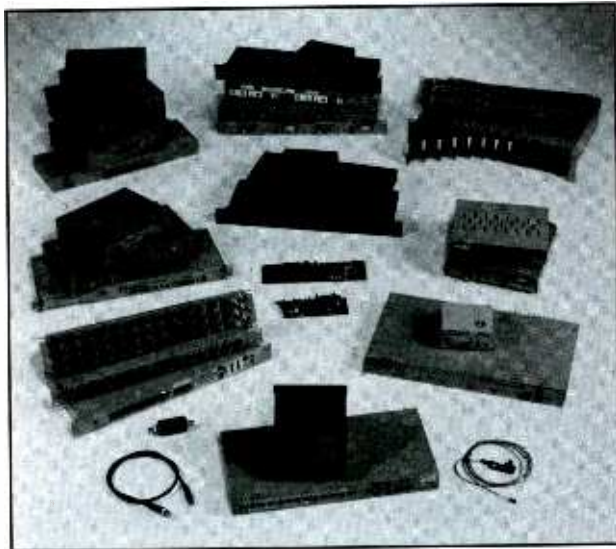
Selecting the right disk recorder is not simple. Take the claims of every manufacturer with a grain of salt. Don't believe every specification just because it is in print. In our industry, products almost always begin shipping before everything on the spec sheet works. Pluto Technology is going into this market with awareness of this and will be careful with its commitments. Few products hit all their targets. Even once all those specs are completed, there is room for interpretation and always unanticipated applications pushing the limits of the envelope.

When playing the video disk game, some words of advice are caveat emptor — buyer beware. If you're going to be the pioneer and buy the latest and greatest toy, buy from people you can trust and still be prepared for some rocks in the road. ■

Thomas Goldberg is senior product manager, Pluto Technologies International Inc., Boulder, CO.

The GALLERY

20 Years of Excellence in...



TELEVISION TESTING, DISTRIBUTION AND FIBER OPTICS

- Fiber optic links for the transport of broadcast video, audio, AES/EBU and up to 400 Mbit/second serial data over multimode and single-mode fibers.
- Test signal, sync and ID generators to automatically test continuity and performance of video and stereo audio circuits.
- Distribution amplifiers for broadcast video, audio, data and DS3 with up to 2500 feet cable equalization, clamping hum cancellation, transformer isolation and up to 200 MHz bandwidth.
- Routing switchers for video and audio with VU meters and 12 Watt speaker amplifier for audio monitoring.
- XLR audio break-out panels for the conversion of industry standard routing switchers and audio DA trays.
- Custom products quickly built to customer specifications.
- Applications include TV, radio, STL, CATV, field production, news remotes, ENG, sporting events, distance learning, industrial, medical, security, CCTV, telco, government, military, intelligent transportation systems and many more.



voice **800 4TV TEST**
fax **516 671 3362**

web **www.multidyne.com**
email **info@multidyne.com**

191 Forest Avenue, Locust Valley, NY 11560-2132 USA • 516 671 7278

Dealers and sales representatives welcome worldwide

Visit NAB booth number 8783

Circle (165) on Free Info Card

The GALLERY

Slow Motion Controllers for Demanding Sports Production



ST300-S/SM Slow Motion Controller

NEW!

- All the features and functions you would expect to find on an \$8,000 to \$10,000 slow motion controller for less than \$3500!
- Simple and easy to use with a small space-saving footprint.
- Powerful set-up menu—configure the slow motion controller for the way you work.
- Quickly and easily store and recall up to 100 cue points. Cue points are retained when power is turned off.
- Slow motion from -100% to +200% of play speed.
- Can be customized for your specific application.
- T-Bar or detented wheel provide fast & easy slow motion control

PHONE:
[818]
252-0198

FAX:
[818]
252-0199

Another Control
Solution From...

DNF
INDUSTRIES

Circle (167) on Free Info Card See us at NAB Booth #8865

Call For Rigid Line MYAT & Components

New installation? Facility upgrade?
"Right Now" emergency?

MYAT is the solution for dependable
quality, maximum performance, long life
and on-time delivery.

Call MYAT at 201-767-5380 or
FAX 201-767-4147 for our complete
catalog and reference guide.



380 Chestnut St
P.O. Box 425
Norwood, NJ
07648



Circle (170) on Free Info Card

CLIP AND SAVE!



BAF BROADCAST VEHICLES

SNV, ENG, EFP, Radio ENG/SNV Vehicles (800) 633-8223

ADDRESS 314-316 Northstar Ct., Sanford FL 32771 LOCAL (407) 324-8250
FAX (407) 324-7860 E-MAIL baf@gate.net WEB <http://www.bafcom.com>

BAF Satellite Space (800) 966-3822

Best price & service, domestic & international • KU & C-Band, SNG & long-term rates
LOCAL (804) 221-0544 FAX (804) 221-0818 E-MAIL 2059198.mcimail.com

European Sales +44 1789 765 850

ADDRESS Unit 2, Tything Park; Arden Forest Industrial Estate; Alcester,
Warwickshire, B49 6ES UK FAX +44 1789 765 855



Circle (166) on Free Info Card

FARADAY TECHNOLOGY ISO 9001 CERTIFIED VIDEO FILTERS



FROM THE
WORLD
LEADER IN
FILTER DESIGN

A complete range of
inexpensive phase
equalized filters for all
video applications from full spec 601 to miniature
oversampling in SIP, DIP or surface mount
packages. Fully buffered active design with
selectable gain and sin x/x correction.

- Pre and Post.
- Active or Passive
- Brickwall Filters.
- Oversampling Filters
- Satellite IF.
- Delay Lines to 30MHz

• Free Custom Design of Active and Passive
Filters.

- Thousands of Existing Designs for New and
Existing applications.
- Highest Performance and Lowest Prices in the
Industry.

E-mail patb@nai.net

Phone 203-272-7728. Fax 203-272-9860

Circle (169) on Free Info Card

LEIGHTRONIX, INC.

CONTROL PRODUCTS

Contact LEIGHTRONIX for
your control solution!



- AUTOMATED VIDEOTAPE PLAYBACK
- UNATTENDED RECORDING
- TIMED EVENT VIDEO AND AUDIO SWITCHING
- REMOTE VCR AND SWITCHER CONTROL

LEIGHTRONIX, INC.

2330 Jarco Drive ■ Holt, MI 48842

■ Ph (517) 694-8000 ■ Fax (517) 694-1600

www.leightronix.com

Circle (168) on Free Info Card

New Viewer Information made easy



Audio OnLine™

is ideal for... Concert info... Sports scores...

Weather/ski/surf reports...

School closings... Traffic updates...

Voting lines... Public Service info...

- Answers 2-16 phone lines
- Hundreds of messages
- Hours of recording time
- On screen call counter
- Installs in any 386+ PC in minutes

HENRY ENGINEERING

503 Key Vista Drive, Sierra Madre, CA 91024 USA
TEL (818) 355-3656 FAX (818) 355-0077

FAX-on-Demand Doc #124 (818) 355-4210

Internet: <http://www.henryeng.com>



HENRY
ENGINEERING

Circle (174) on Free Info Card

See us at NAB Booth #4012

SPENCER STILL STORE-2000



"Superstation" look . . . without the super budget!

- Designed for LIVE NEWS Production
- Fast, high resolution User Interface
- NETWORK with C-G's and Paint systems
- DUAL Preview channels plus Program
- Key dazzling graphics with 0-100% transparency with our Linear keyer
- > 10,000 still storage capability
- DVE for Live "Picture in Picture"
- Create Logos with transparency
- Very powerful database

SHOWING AT
NAB #6532
NEXT TO SONY

SPENCER
TECHNOLOGIES, INC.

NEWSTORE™ The Video-Clip Store System

- Similar to our STILL STORE-2000, but stores video & audio clips
- Assemble entire newscast; News & Sports stories, Promos, Show opens/closes, Bumpers, etc.
- Replace VTRs in Live News
- Complete random access
- Last-second changes are fast
- Recues are INSTANT
- Non-linear Editing
- Powerful database
- Fast intuitive User Interface with Touchscreen for simplicity

Burbank, CA Tel: 818.840.0907 FAX: 818.840.8375
E-mail: 104067.321@compuserve.com

Circle (177) on Action Card

Matthey

Serial Digital Video

INTERFACE PRODUCTS

- ☐ Serial Digital A-to-D and D-to-A
- ☐ NTSC/PAL Decoders/Encoders
- ☐ Digital DA's
- ☐ Monitoring D/A's
- ☐ Audio embedders/extractors

Television Equipment Associates, NY
914.763.8893 Fax: 914.763.9158
Matthey Electronics, UK
+44 1782 524918 Fax: +44 1782 524977
E Mail: sales@matthey.demon.co.uk

Circle (171) on Action Card

PUT THE POWER OF NUCOMM INC. IN YOUR HAND

with our HTG4 Hand Held Test Generator

- SMPTE/EBU Color Bars, Multi-Burst, NTSC, Ramp & Black Burst
- 16 Character ID Display
- Small size — 4.5" x 2.75" x 1.0"
- Stereo 1 kHz Test Tone
- 12 Hours of Battery Operation



ONLY
\$625

JUST CALL 1-800-9-NUCOMM X3030

Credit Cards Accepted



NUCOMM INC.
MICROWAVE COMMUNICATION PRODUCTS
101 Bilby Rd., Hackettstown, NJ 07840
Tel: 908-852-3700 Fax: 908-813-0399
http://www.nucomm.com

Circle (172) on Action Card

SONY & Panasonic® ORIGINAL REPLACEMENT PARTS

Stocking the Nation's Largest Inventory
of Professional and Industrial Parts
— AND —

EVERYTHING FOR ALL YOUR BROADCAST NEEDS

Belden **AMPHENOL** **SHURE**
BUD **NEUTRIK USA**
TELEX & MUCH MORE!

CALL NOW TO SPEAK WITH OUR BROADCAST SPECIALISTS!

HERMAN
ELECTRONICS

PH: 800-938-4376
Ext. 335 & 336

FAX: 305-392-3377

7350 Herman Way
Miami, FL 33122

Circle (173) on Action Card

professional services

WRAYTRANSR.F.SYSTEMS CONSULTING

Specializing in

- Transmitter/RF System •
- Training, Repair, Alignment

• RF/CATV •

Distribution, Design/Installation

P.M. Program Development
306-545-6385



NETCOM

STATE OF THE ART ENGINEERING
FOR AUDIO AND VIDEO
ENGINEERING DESIGN • CAD DRAFTING SERVICES
CABLE FABRICATION • PRE-WIRED PATCH PANEL RACKS
SYSTEM INSTALLATIONS • EQUIPMENT SALES

(201) 837-8424

FAX: (201) 837-8384
1465 PALISADE AVE., TEANECK, NJ 07666

JOHN H. BATTISON P.E.
CONSULTING BROADCAST ENGINEER,
FCC APPLICATIONS AM, FM, TV, LPTV
Antenna Design, Proofs, Fieldwork
2684 State Route 60 RD #1
Loudonville, OH 44842
419-994-3849 FAX 419-994-5419

video, audio, & automation electronics
serving manufacturers & systems integrators

electronics R & D & custom product design

Call now to see us at NAB

BARANTI GROUP INC



Professional Engineers
Ontario

phone (905) 479-0148
fax (905) 479-0149

East Coast Video Systems

consultants • engineers • systems integrators

3 Mars Court
Boonton, NJ 07005
201.402.0104
Fax: 201.402.0208
www.ecvs.com

on line in time

CHAN ASSOCIATES

Strategic Marketing • Public Relations • Advertising
1307 Shadow Lane, Suite C
P.O. Box 5509
Fullerton, CA 92838-0509
Phone: (714) 447-4993
Fax: (714) 576-0284
Pager: (714) 506-1357
Email: cchan@chan.assoc.com
CompuServe: 74601,2707

Curtis Chan
President

D.L. MARKLEY & Associates, Inc. CONSULTING ENGINEERS

2104 West Moss Ave.
Peoria, Illinois 61604
(309) 673-7511
FAX (309) 673-8128
Member AFCEE



Stainless, Inc.

50 Years of Broadcast Tower
Design - Fabrication - Construction

210 S. Third St.
North Wales, PA 19454

Voice 215-699-4871
Fax 215-699-9597

CONSULTING • ENGINEERING


BROADCAST PRODUCTS

BECK ASSOCIATES

2403 HOWARD LANE
AUSTIN • TX • 78728
1-800-728-3725
FAX: (512) 388-1833

INSTALLATION • FURNITURE

NEW!!



SDV 4-4 - Serial Digital and Analog Video Monitoring DA - 4-2-2/270 mbps. Four relocked SDV outputs, plus four CVBS or RGB outputs. 10 bit DACs. Fits GVG 8500/8800 DA frames. **\$895**

TBC-RMT - TBC Remote Control Unit Remote control of up to 3 TBC's. For use with internal TBC's on BVW, DVW, PVW, UVW, and BVH Beta machines or any machine using Sony BVR-50 controller. Purchased with 1, 2, or 3 modules. With 3 modules. Now available for JVC machines - Series 22, 80, 85. **\$960**

SCR-4X8 - Serial Machine Control Router - Input/Output Twelve rear mounted DB9-F connectors (four controllers, eight devices). EIA RS-422 send and receive. Controls: Twelve lighted pushbuttons for channel assignment. **\$980**

SCP-10 - Serial 422 Patch Panel 10x10 passive non-normalizing serial data patch panel. Two rack units high. Legend strips and 10 patch cords included. **\$350**

VU2-P - VU/Peak Meter with Phase Indicator - Simultaneous peak and VU display. Solid state phase indication. Highly readable LED arrays. Adjustable headphone output. Hi-impedance looping inputs... **\$890**

SPK-2 - Two Channel Audio Monitor Two channel audio confidence monitoring. Accepts both balanced and unbalanced inputs. Five switchable listening modes. Headphone output with speaker mute. **\$650.**

Circle (300) on Free Info Card

classified

FOR SALE



Glare-Free Viewfinders!

Hoodman guarantees glare-free monitor images in any environment. Hoods sized to fit 2-inch through 21-inch monitors, viewfinders and teleprompters can be shipped to you today! For more information, call

(310) 379-6391

P.O. Box 816, Hemosa Beach, CA 90254



Circle (301) on Action Card

ANTENNA STRUCTURE REGISTRATION SIGNS



Mail us your F.C.C. Registration number

12"X18" Sign \$75.00

610-458-8418

Call for information Voice or Fax

ID-ER Antenna Products

Thomas Moyer 22 Bryan Wynd Glenmoore, PA 19343

FOR SALE Television broadcast transmitter General Electric 23.5 KW UHF transmitter with klystrons, waveguide, diplexers, cooling system and cabinets. Currently on channel 34. 10,000.00 O.B.O. (310) 902-7691.

NEW GE-HT TRANSFORMER, 150-240 Voltage, \$600. Scala HDCA 5 EB 4x4 Antenna Array, \$1,600. 1211-C Unit Oscillator & Power Supply. Hermon Hosmer Acoustic Calibrator, 410-x15, and 410-A sound level meter. F.L. Clark (505) 262-4789.

UHF TRANSMITTER Harris TVE-60S Channel 18. Complete transmitter with upgraded Visual Exciter, S Tube modification, Variable Coupler, and Mod Anode Pulser. Spare parts include magnet assembly, GE Voltage Regulator and Dielectric transfer switch, 6 1/8", 75 ohm, 4 port. Available now. Contact Bill Welty, KSCI-TV, 12401 W. Olympic Blvd., Los Angeles, CA 90064. (310) 442-2303.

LINEAR KEYSER MODIFICATION for video production switchers. Convert your switcher and handle transparencies and glows through the entire range of your Character Generator. The modification is a precision preset linear key processor. Make the most of your CG, DVE or Paint System. \$795.00 Please call L&L Creative at 770/918-1886 or Fax 770/918-1885.

Model 192 Fiber Optic Video + Audio Link



- Celebrating our 10th anniversary.
- Meets RS250C short-haul requirements.
- Link performance certified with VM700A.
- Singlemode laser link at \$1700/pair.

In US and Canada call: 1-800-DATA-LEE

Lee Data Communications

2501 Technology Dr., Hayward, CA 94545

* Studio Exchange *

Burbank

(818) 840-1351 Fax (818) 840-1354

New and Used Video Equipment

Audio/Video Dealer

Starring

Panasonic & Sony

CALL NOW FOR CURRENT SPECIALS

BUY, SELL, TRADE & CONSIGN

816 N. Victory Blvd.

Burbank, CA 91502

TARGA 2000E video editor with 40mb memory with Adobe Premier and Video for Windows. 8X Cdrum \$4,950.00 - new. 804-525-0900.

classified ad rates

Advertising rates in Broadcast Engineering Classified Section are \$128⁰⁰ per column inch, per insertion, with frequency discounts available. There is a one inch minimum and ten inches maximum.

Ads may also be purchased By-The-Word for \$1.80 per word, per insertion. Initials and abbreviations count as full words. Minimum charge is \$40⁰⁰ per insertion.

Blind Box ads (replies sent to Broadcast Engineering for forwarding) are an additional \$40⁰⁰. Reader Service Numbers are available for \$50⁰⁰ per insertion. Ads 4 inches or larger receive a free Reader Service Number and will be listed in the Advertiser's Index.

Call Jeff Utter
at 1-800-896-9939
or 913-967-1732

classified

SERVICES

Chapman / Leonard
Studio & Production Center
Orlando, Florida
 'State of the Art in Quality and Service'
 Fully Equipped 9000 Sq Ft Sound Stage
 Chapman Cranes, Dollies & Pedestals
 Remote Camera Systems & More!



50' X 60' X 26' Hard Cyc
 Ask for a video on our facility!
 Toll Free: (888) 33 STAGE
 www.chapman-leonard.com

RF/SNG ENGINEER AVAILABLE for temporary or special projects. Experienced RF and Video Maintenance. World Wide 307 638 2394.

FULL-TIME TRANSPONDER SPACE AVAILABLE ON CABLE SATELLITE
 located in the premiere cable neighborhood at SATCOM C-3 at 131 W, using General Instruments DigiCipher II (MPEG-2) video compression system. Your network could be seen using the new digital set-top technology, improving your network's chance of cable carriage. In addition to transponder space, uplinking, playback, editing, and duplication services are also available from our new digital uplink facility located in Englewood, CO.
 Call Doug Greene @ 303-784-8809 or
 E-Mail at daugreene@aol.com

ENCORE!
 If you were featured in this magazine — spread the news! Reprints have a proven positive effect on corporate image. **Sign up for your encore performance today!**
Call Chris Lotesto
 1-800-458-0479 • fax 312-435-2359
 An INTERTEC®/K-III Publication
BROADCAST
 engineering

HELP WANTED

Television Engineer III
 UNC Center for Public Television, RTP, NC, seeks an experienced engineer with demonstrated skills in installing, operating and maintaining state-of-the-art broadcast television equipment for studio and remote production. Responsibilities include tube/CCD studio/field camera set-up and maintenance, assuring signal quality control, and component level preventative and corrective maintenance. Must be a creative team player with good oral and written communication skills. Must be knowledgeable of digital television technology and the use of computers in a television environment. Satellite uplink/downlink experience desired. Requires two years of broadcast television experience and a related associate degree or equivalent education/work experience. FCC General Class license or SBE certification preferred. Some travel and weekend, holiday, night work required. Salary Range: \$27,364 - \$45,114. Probable Hiring range: \$27,364 - \$31,604. Apply in writing by Monday, April 14, 1997 to UNC Center for Public Television, Human Resources Office, P.O. Box 14900, RTP, NC 27709-4900. Federal Law requires that upon being hired an applicant must present, upon request, satisfactory evidence to verify employability and identification. EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER. WOMEN AND MINORITIES ENCOURAGED TO APPLY.

MERIDIAN
 TELEVISION SYSTEMS, INC.
 Meridian Television Systems, a full service systems integration firm based in the Los Angeles area is expanding!
 Our clients include the major TV networks and production facilities domestically and worldwide.
 We are looking for qualified candidates to join our team in these positions:

- **Video Systems Design Engineers**
AutoCAD experience required
- **Project Managers**
- **Installation Supervisors**
- **Wiremen**
- **TV Maintenance Engineers**

Please send your resume and salary history in confidence to:
Personnel Director
Meridian Television Systems
 25510 Avenue Stanford, Suite 105
 Santa Clarita, CA 91355
 no phone calls please
 Meridian Television Systems is an Equal Opportunity Employer

KGTV SAN DIEGO'S 10, looking for broadcast maintenance engineer. Experience maintaining Beta SP equipment a must. Experience also needed working with station automation systems, microwave equipment, studio systems and audio equipment. Candidate must be computer literate. Minimum 5 years broadcast maintenance experience. FCC General License required. SBE certification a plus. Must be a self starter with good work habits and organizational skills. Send resumes to KGTV, Attn: Ron Jennings, P.O. Box 85347, San Diego, CA 92186

Uplink Engineer
 TCI's Broadcast Satellite Uplink Center is growing from 275 uplinked services to 400. We need technicians to construct and operate this state of the art facility. Several positions available with responsibilities and compensation dependent on qualifications. Experience with digital video, computer based control systems, RF and broadcast operations desired. SBE, SCTE certification preferred.

Uplink Draftsperson
 TCI's National Digital TV Center is seeking CAD draftsperson to set up and administer documentation and planning documentation. Experience with video and broadcast operations desired. SBE, SCTE certification preferred.

Drug and background check will be required for employment. Successful applicants needing an accommodation for the interview should inform manager at time of contact. Send resume with salary requirements to: **TCI National Digital Television Center**, Attn: Office 105, 4100 E. Dry Creek Rd., Littleton, CO 80122, fax 303-486-3891. EOE.

Broadcast Technician for Hollywood, CA based state of the art digital television production truck and studio facilities. Duties include installation and repair of all types of broadcast audio and video equipment. Operational experience with professional audio mixers, analog and digital production switchers, routers, intercom systems, cameras and other associated production equipment a must. Minimum qualifications include: 3+ years broadcast video, audio equipment repair and operations experience. The preferred candidate will also possess a B.S. Degree in Electronics as well as recent production truck experience. Other duties, weekends, and shift work as required. An interview will be required of final candidates. Any applicant who is scheduled for an interview should notify the interviewer at time of contact if he/she requires an accommodation for the interview. Drug test and criminal records check required of final applicants. Non-smoking environment. Send resume and salary required to Director of Broadcast Engineering, 4100 E. Dry Creek Rd., Littleton, CO 80122. EOE.

ENGINEERING/TELEVISION A.F. Associates, the world's leading supplier of turnkey television systems, is seeking an applications/engineering support person. This person will be responsible for generating technical proposals which includes equipment specifications and labor/materials estimates. Applicant should be computer literate and have an in-depth knowledge of broadcast television equipment, systems and facilities. Please forward resume to: Bill McKnight, AF Associates, 100 Stonehurst Court, Northvale, NJ 07647. Fax number 201-784-8673. Email billm@afassoc.com

HELP WANTED

MAINTENANCE ENGINEER KNXV-TV, Phoenix, Arizona seeks an individual with repair and installation skills of television broadcast and computer equipment. Should have three years experience in maintaining audio, video, computer and RF broadcast equipment and systems. This position requires a two year electronic technical degree or equivalent, and experience with Beta and CCD ENG camera equipment. Fax resume to Engineering Manager at (602) 304-3000 or send to KNXV-TV, 4625 S. 33rd Place, Phoenix, Arizona 85040. EOE.

HELP WANTED



Windows Programmer

Located on the beautiful Oregon Coast, CBSI is the world's leading provider of business computer systems in the radio broadcasting industry. We offer a competitive comp. and benefit package including a 401(k) Match & Profit Sharing.

We are seeking individuals who have proven computer programming experience in C or C++ and can quickly transition to object oriented design & implementation in Visual C++ utilizing Microsoft Foundation Classes (MFC). Relevant additional experience could include programming for MS-DOS, Win16, Win32, multimedia, networking, and multi-user data access.

Custom Business Systems, Inc.

Human Resources Manager

P.O. Box 67

Reedsport, OR 97467

e-mail to HR@cbsi-software.com

Cut & Paste doc. in e-mail

KRIV Fox Television Houston is moving to a large state of the art digital television studio facility in the fall of 1997 and is accepting applications for a Maintenance Engineer. Position is open immediately. Must possess demonstrable component level experience in Sony betacam; Analog/Digital switchers, graphic generators, non-linear edit systems, etc. Knowledgeable in test & measurement procedures with analog and digital video, and audio and AES/EBU Audio. Ability to work under pressure of fast pace major market operation. Min. 5 years maintenance experience and SBE certification. Send resume with salary history to KRIV, Fox Television, P.O. Box 22810, Houston, Tx., 77227, Attn: Charmaine Williams. EOE/M/F/V.



TELEVISION ENGINEERS

Turner Broadcasting System, the leading News, Sports, and Entertainment system in satellite communications, has career opportunities for engineers with **broadcast maintenance** experience. These positions demand an extensive background in television engineering and at least two years of training in electronics technology. Turner Broadcasting System offers an excellent benefit and compensation program.

Send resumes to:

Mr. Jim Brown, Corp. Engineering
Turner Broadcasting System, Inc.
One CNN Center
P.O. Box 105366
Atlanta, GA 30348-5366
(404) 827-1638 office
(404) 827-1835 fax

TBS is an equal opportunity employer

Design and build the future!

Most broadcast engineers only get to design and build a few new facilities in a career. At National TeleConsultants you will create cutting edge broadcast, and entertainment facilities each and every day. Join the world's leading independent facility design team building advanced television projects—from Hollywood to New York and around the world.

- **Television Systems Engineers:** Openings at all levels. Knowledge and experience of video and audio design, digital systems engineering and integration desirable.
- **Project Directors:** Experience in project management required. Experience in television operations desirable.
- **Installation Services Manager:** Responsible for overall operation of our installation facility, including crewing, scheduling, and stock management. Television systems installation experience is desirable.
- **Installation Supervisors:** Coordinate all aspects of installation projects: Crews, work orders, schedules, installation practices and QC.

NationalTeleConsultants

EOE. Please send resume with salary history to:

National TeleConsultants, Inc.

Attn: Human Resources

700 North Brand Boulevard, 10th Floor

Glendale, CA 91203-1238

fax: 818-265-4455 e-mail: hr@ntc.com



HARRIS

Harris Broadcast, a division of the \$3.5 billion Fortune Harris Corporation, is seeking a World-Class candidate for the position of Systems Engineer with its Systems operation located in Florence, Kentucky. Harris Broadcast Systems is a worldwide supplier of mobile radio and TV and production studio systems.

In this High-profile role, you will be responsible for project management, system design, customer liaison as well as interfacing with project architects and consultants. The design element of this position will utilize your ability to create detailed Audio Video, RF system flows. A working knowledge of both analog and digital system concepts is necessary. We are looking for a team player who can plan, prioritize, meet project goals and communicate effectively.

Candidates must have a 4 year college degree and 3-5 years Broadcast Systems experience.

Harris Corporation offers a competitive starting salary with a comprehensive benefits package.

If you qualify and are interested in working with state-of-the-art equipment in a professional and challenging environment, please send resume (including salary history/requirements) in confidence to:

Shawn Oberreiter, Supervisor, Human Resources, Harris Corporation - Broadcast Division
P.O. Box 4290, Quincy, IL 62305

Equal Opportunity Employer

STAFF ENGINEER Prominent New York post production facility is looking for a maintenance engineer. Candidate should have knowledge of electronics, mechanical dexterity and be self motivated. Knowledge of computer systems a plus. Salary commensurate with experience. Contact: Tom Saylor, Empire Video, 216 East 45th Street, New York, NY 10017. Phone: (212) 687-2060 FAX: (212) 682-1138.

CHIEF ENGINEER The successful candidate will have superior knowledge of UHF transmitters as well as a strong maintenance background. Organizational skills will be necessary for planning and rebuilding our facilities to meet future needs. Computer skills are a must. Send your resume and salary history to Chief Engineer, KSHV-TV, 3519 Jewella Avenue, Shreveport, LA 71109 or fax to 318-631-4195. EOE.

Tektronix and Grass Valley

A Picture Perfect Opportunity!

Tektronix in Grass Valley, California, offers you an unmatched opportunity, from both a career and lifestyle perspective. Our mission is to bring the highest quality video broadcast/transmission to our customers, which means that we are pioneering the way in areas such as digital television and video. In fact we were recently awarded an Emmy for leading the television industry into the 10-bit world! That's Emmy #7 for Tektronix!

Picture perfect describes not only our technology focus but the quality of the life available to Tektronix Grass Valley employees and their families. We offer an informal results-oriented work environment nestled in the Sierra Nevada foothills, combined with an excellent quality of life – affordable housing, less congestion, clean air and an excellent school system.

If you're a creative, talented professional looking to join the top team in digital video and television, look no further!

Project Engineer – Grass Valley

You will work with a team of Engineering and Application professionals developing solutions utilizing Tektronix products from our Video and Networking Division. Responsibilities include the development and specification of work to develop system solutions in a multi-peripheral networking control environment. This position requires a Bachelor's degree in Engineering or a technical field.

Field Service Engineers – New York and Los Angeles

Join a team of field professionals responsible for on-site repair, configuration and alignment of video and teleproduction equipment including production switches, routers, video effects, distribution and digital storage products. Requires a BSEE or equivalent and 4-6+ years' technical support experience in the television, post-production or broadcast industries.

Customer Technical Support Specialist – Grass Valley

Provide post-sales technical support of hardware and software to answer questions and solve problems regarding product installation, maintenance, integration with other products, and software applications. Requires a CS/Electronics degree and 5+ years' experience in a telecommunications environment. Understanding of compression formats, TCP/IP-based networks, UNIX, Solaris and Windows 95/NT operating systems, and Telecom signalling essential.

Training Engineers – Grass Valley and Oregon

You will originate and present training classes and design educational tools for our Grass Valley, Video Transport, Disk Recorder, and Network Display products. Additionally, you'll execute the training strategy to ensure our customers receive high quality, timely training on product applications, operation and maintenance. Position requires 3-5+ years' technical training design and instruction experience with video technologies. Excellent presentation skills and a proven track record as a technical instructor required. Good computer skills a necessity.

To become part of our winning team, mail your resume to: Tektronix, Inc., P.O. Box 1114, Dept. BE/0301/RM, MS N4-2H, Grass Valley, CA 95945, Attn: Ron Marengo; Fax to (916) 478-3808; or E-mail to internet address: ron.marengo@tek.com For more information, visit us on the WWW at <http://www.tek.com> Principals only, please. All employment offers are contingent upon successful completion of our pre-employment drug test. Tektronix is an equal opportunity/affirmative action employer.

Tektronix

It's all happening here! www.tek.com

classified

HELP WANTED

SYSTEMS INTEGRATION TECHNICIAN Wolf Coach, Inc., a leader in the mobile communications industry for 30 years, is currently expanding its system integration department. Three to five years experience with RF, KU band & terrestrial microwave (up to 14Ghz) as well as audio-video system installation required. Supervisory or management experience preferred. Electronics-communications degree a plus. Send resume with salary goals to: Wolf Coach Inc., Attn.: Human Resources, 7 "B" St., Auburn Industrial Park, Auburn, MA 01501.

SOUTH FLORIDA TV STATION seeking self-motivated Broadcast Engineer with extensive UHF transmitter experience. Sunday-Thurs-day 3rd shift position. SBE certification desirable. Send resume and salary requirements to: Personal/Confidential, Classified Ad Coordinator, Broadcast Engineering, Dept. 784, 9800 Metcalf, Overland Park, KS 66212-2215. We are an equal opportunity employer.

HANDS-ON EXPERIENCED TELEVISION studio engineer. Repair of video tape & studio equipment to component level. Resume to Jerrell Kautz, WCBI-TV, Box 271, Columbus, MS 39701, FAX: 601-329-1004, Email: jkautz@wcbi.com.

MAINTENANCE ENGINEER: Seasoned professional desired for component level troubleshooting and repair of all broadcast and industrial video recorders; special emphasis on D-2, Beta, SP, and HI-8. Some field work required. Must be motivated, self-starter for this excellent opportunity in sunny southern California. Resume to: Personal/Confidential, Classified Ad Coordinator, Broadcast Engineering, Dept. 783, 9800 Metcalf, Overland Park, KS 66212-2215.

MAINTENANCE/ FIELD SERVICE ENGINEER

Synergistic Technologies Incorporated (STI) is seeking a self-motivated individual, with good client skills, to perform field service and in shop repair on television broadcast and post production equipment.

Candidates should have 5+ years experience and possess a comprehensive knowledge of facilities and systems. Component level repair of production equipment, cameras, Betacam, 3/4", 1", digital VTRs, and editing systems expected. Familiarity with serial digital is preferred. Computer literacy is essential, networking a plus.

STI designs, integrates, and services production, cable, broadcast, and mobile facilities in the mid-Atlantic region; the nation, and throughout the world. Local and some regional travel is required. Send resume/salary history to:



SYNERGISTIC
TECHNOLOGIES
INCORPORATED

ATTN:
KARL PAULSEN

121 HILLPOINTE DRIVE, SUITE 700
CANONSBURG PA 15317
FAX 412/873-4770
EMAIL: employment @ stinet.com

classified

HELP WANTED



DON'T
JUST BUILD
TECHNOLOGY.
BRING IT
TO LIFE.

Sony's Business and Professional Group is seeking the following broadcast professionals:

Senior Video Systems Design Engineers

We are looking for seasoned engineers to design large-scale digital audio/video facilities, including floor plans, equipment rack layouts and detailed signal flow diagrams. Candidates must have 5+ years' experience with state-of-the-art analog and digital A/V, production and broadcast facilities, and be especially strong in system-level engineering design and technical problem-solving. Fluency in MS Excel for Windows is required; AutoCAD, Word and Access knowledge is a plus. Team-building, communication skills and the ability to work with minimal supervision are also key. We have both regular and contract positions available, but all require full-time presence at our San Jose facility. Some travel during installation/testing will be required. (Job # CY-BE1)

Project Managers

Responsible for the management of resources to execute fully integrated broadcast systems. Must be able to complete projects on time and within budget. The ideal candidate will bring 5+ years of project management in broadcast or production systems. (Job # CY-BE2)

Senior Marketing Manager

Develop and direct marketing strategy for the broadcast industry. This includes video file server-based automation systems, master control routing switches and related products. Position requires 10+ years of extensive marketing experience in broadcast or other closely related industry. (Job # CY-BE3)

Engineering Instructor/Trainer

Develop and present courses on repairing and maintaining state-of-the-art video equipment and systems. Courses will be constructed around focused objectives and concentrate on hands-on skills development. You must have strong computer skills, BSCS/BSEE with 5 years' experience in the broadcast/professional video industry. (Job# CY-BE4)

Product Support Engineer

Manage all technical support for products such as Sony's Integrated Duplication Operation, Video Store and Edit Station. You will review all technical documentation, actively problem-solve and act as a liaison between factory design and support, and marketing, field service and product sales. Position requires a BS in EE or CS with 7+ years of experience developing and supporting software-based products and 2+ years with servicing or designing Sony products. (Job # CY-BE5)

Please send your resume, INDICATING CODE OF INTEREST, to: Sony Electronics Inc., Attn: Professional Staffing, MS SJ-2C2, 3300 Zanker Road, San Jose, CA 95134-1901. Fax: (408) 955-5166. E-mail (in ASCII text): sj_jobs@mail.sel.sony.com. For more information, visit our Web site at: <http://www.sel.sony.com/HR/EOE>.



SONY®

IMMEDIATE OPENING FOR MAINTENANCE engineer in central Florida. Must have very strong VTR skills. FCC license preferred. Minimum 2 year technical education and 5 years experience in post production industry. Send resume and salary requirements to: John McMahan, Century III, 2000 Universal Studios Plaza, Orlando, Florida 32819.

KBMT-TV ENGINEERING: ABC affiliate in Southeast Texas is looking for a studio engineer with a minimum 3 years experience with Sony Betacart, Beta SP, 3/4" and Sony Betacam. Ampex AVC Switcher, ESS 5 Still Store, ADO 100, and DCT 500 Editor. Harris transmitter experience is a plus. Send resume to EEOC Officer, KBMT-TV, P.O. Box 1550, Beaumont, Texas 77706. EOE.

WE PLACE ENGINEERS USA & WORLDWIDE



KEYSTONE INT'L., INC.
16 Laflin Road, Suite 900
Pittston, PA 18640, USA

Fax (717) 654-5765 • Phone (717) 655-7143
E-mail: keyjobs@keystone.microserve.com

ENGINEERING PROJECT MANAGER

Capitol Broadcasting Company seeks a person to help design and market group towers for HDTV in markets across the country. Engineering background with some sales or marketing experience and college degree or equivalent, is required. Solid knowledge of tower, antennas, transmitters and working knowledge of high definition, digital television is preferred. An excellent company with great benefits. Send resume to Corporate Human Resources, Capitol Broadcasting Company, P.O. Box 12800, Raleigh, NC 27605. Specify job #97018. Visit our website at www.cbc-raleigh.com and apply under employment opportunities. EOE/M/F.



Western Region Sales Manager

Dielectric Communications has an immediate opening for a regional sales manager with responsibility for the US West Coast and Rocky Mountain territories.

Must have technical background with experience in high power broadcast TV & FM antennas, transmission line and waveguide, RF components and RF systems.

Will need to demonstrate strong individual management skills, leadership, and be highly motivated. Previous sales experience is preferred, strong technical background a must.

Qualified candidates please send your resume to:

Dielectric Communications
Human Resources Dept.
Tower Hill Road
Raymond, ME 04071

Fax (207) 655-4989

Dielectric is an EOE, M/F/D/V employer.

MAINTENANCE ENGINEER Position requires at least five years experience maintaining Studio, Control Room, and Transmission equipment in a Broadcast Television environment. Expertise is required in component-level repair of video, audio, and digital equipment and installation of broadcast systems. Experience with computers and/or RF systems a plus. A Degree in Electronics or equivalent training is necessary. Please send resume to: Bill Beam, WABC-TV, 7 Lincoln Square - 6th Floor, New York, NY 10023-0217. No telephone calls or faxes please. We are an Equal Opportunity Employer.

A SUPERB OPPORTUNITY IN JAPAN

Customer Support Engineer

Quantel K.K., a wholly-owned Japanese subsidiary of Quantel Limited, was established over 10 years ago to serve the specialist needs of the local market place. With offices in Tokyo and Osaka, we enjoy an excellent reputation and have achieved considerable success in all our market sectors, including video, print and film. Our customers include many of Japan's largest and most prestigious companies - a fact which reflects their trust in our local staff and the strength of Quantel's products.

Due to continuous strong growth, we wish to expand our team of engineers to ensure an ongoing high level of customer support. We are therefore looking for an English speaking engineer with solid experience of the professional video business to liaise closely between the UK head office and local staff and customers.

An understanding of Quantel equipment and Japanese language ability will be looked upon favourably. However, you will initially undergo intensive technical training in Newbury before taking up the post in Japan. Moreover, the development of Japanese speaking abilities to a practical level will be a condition of the post.

This is a rare, high profile appointment with ample opportunity for further advancement. The salary and benefits package will fully reflect the calibre of individual we require.

If you would like to join an outstanding international company, please write or telephone for an application form to Mike Taylor, Recruitment Officer, Quantel Limited, Tumpike Road, Newbury, Berkshire RG14 2NE UK.
Telephone: 011 44 1635 48222.
Web site: <http://www.quantel.com>.



VACATION-RELIEF MAINTENANCE ENGINEER: Responsibilities include the maintenance of Studio, Video and Tape and Electronic News Gathering equipment, including cameras, video tape recorders, video switchers, editing and transmission equipment. Experience with broadcast graphics equipment, including Character Generators and Paint Systems a plus. FCC license or SBE certification preferred. Candidates must have Broadcast Station or related experience. Please send resume to: Bill Beam, WABC-TV, 7 Lincoln Square-6th Floor, New York, NY 10023-0217. No telephone calls or faxes please. We are an Equal Opportunity Employer.

CHIEF ENGINEER - Dominant Gulf Coast affiliate seeks a chief engineer who can lead us into the digital future. The successful candidate will have excellent technical and leadership skills plus thorough knowledge of broadcast equipment including RF transmission systems. Requirements are an FCC license, college or technical degree (or equivalent experience), plus at least 10 years broadcast engineering experience. Send letter, resume, references and salary requirements to Veronica Bilbo, EEO Officer, KPLC-TV, P.O. Box 1490, Lake Charles, LA 70602. EOE.

MAINTENANCE TECHNICIAN Skilled technician position available requiring an in-depth knowledge of RF systems and TV transmitters along with ENG equipment, maintenance and operations experience plus TV production experience. General Radiotelephone license and ENG equipment maintenance experience preferred. Please send resumes to KCNC-Human Resources, 1044 Lincoln St., Denver, CO 80203. EOE/MF.

SC ETV IN COLUMBIA, SC is currently recruiting for the following position: Position #018850, Vice President for Engineering (Program Manager III). Minimum Salary: \$55,548 Responsible for the planning, design, construction, operation and maintenance of technical facilities used in the production and transmission of TV and Radio programs. This includes TV studio facilities, recording and post production facilities, master control, TV and Radio transmitter facilities, satellite uplink and downlink facilities, microwave systems, ITFS transmitting and reception systems, fiber optic systems, and building distribution systems. Responsible for setting and maintaining overall technical federal and state standards, administering the Engineering Division (including personnel and funds allocated to that Division). Responsible for ensuring that network complies with all FCC Rules and Regulations. Requirements: Bachelor's degree in Engineering and 10 years experience or equivalent. Must be a Registered Professional Engineer in South Carolina. Must be knowledgeable of the architecture of computers and computer systems for engineering purposes. To obtain an SC ETV application, you may call our Job Line 803-737-3320 or contact Bonnie Hite at 803-737-3457 in the Human Resources Department.

TV MAINTENANCE TECH: Installation and maintenance of Television and radio broadcast equipment. Associate degree in Electronics Technology, four years of broadcast television maintenance and installation experience required. Equivalent combinations will be considered. SBE certification preferred. Cover letter and resume to: Dispatch Broadcast Group, Business Office #153, 770 Twin Rivers Dr., Columbus, OH 43215. Qualified minorities and women are encouraged to apply, EEO Smoke and Drug free workplace.

TECHNICIAN ENGINEER Two years experience as broadcast TV bench technician. Must be familiar with 1/2 inch broadcast video tape machines and small cameras (CCD and tube types). Some knowledge of microwave and satellite operation. Should possess or qualify for a state driver's license in order to operate company vehicles. (Some auto mechanics ability preferred, but not mandatory). Apply at KOB-TV, c/o Sam Tikkanen, KOB-TV, 4 Broadcast Plaza, SW, Albuquerque, NM 87104 EOE/M-F.

ad index

	Page Number	Reader Service Number	Advertiser Hotline		Page Number	Reader Service Number	Advertiser Hotline
AAVS/Div. of Sencore	91	46	800-769-AAVS	IDX Technologies	224	128	619-560-9779
Accuweather Inc.	287	158	814-234-9601	Ikegami Electronics Inc.	23	8	201-368-9171
Acrodyne Communications Inc.	179	90	800-523-2596	ITS Corporation	249	138	412-941-1500
ADC Telecommunications	160	99	800-726-4266	Internet NAB Show Daily	217		800-288-8606
Advanced Broadcast Systems	156	96	606-282-7580	Intraplex, Inc.	178	104	508-692-9000
Advanced Broadcast Systems	MAP		606-282-7580	Intraplex, Inc.	MAP		508-692-9000
AJA Video	244	148	916-274-2048	Ipitek	143	81	619-438-8362
Alamar Electronics	151	83	408-866-9373	Itelco S.P.A.	191	123	
Ancor Communications Inc.	119	75		ITVS	229	113	219-633-220
Antenna Concepts	120	76	916-621-2015	Jampro Antennas, Inc.	44	33	916-383-1177
Anton/Bauer	167	88	800-422-3473	JVC Professional Products Co.	18-21	7	800-JVC-5825
ASACA/Shibasoku Corporation	228	132	310-827-7144	JVC Professional Products Co.	189	121	800-JVC-5825
ASC Audio Video Corporation	127-134		818-843-7004	Landsea Systems Inc.	160	100	757-468-0448
ASC Audio Video Corporation	145	82	818-843-7004	Larcen	279	157	303-665-8000
Associated Press	43	32	202-736-1152	LDI '97	217		
Audio Precision	253	140	800-231-7350	Leader Instruments Corporation	52-55	23-24	800-645-5104
Autopatch	83	51	509-235-2636	Ledtronics, Inc.	180	91	310-534-1505
Avid Technology	5	5	800-949-2843	Leighttronix Inc.	292	168	517-694-5589
Avitel Corporation	154	85	801-977-9553	Leitch Incorporated	304	3	800-231-9673
BAF Communications Corporation	289	159	407-324-8250	Litton Electron Devices	147	70	
BAF Communications Corporation	292	166	407-324-8250	LNR Communications Inc.	237	135	516-273-7111
Beck Associates	294	300	512-388-9777	Louth Automation	78-79	42	415-843-3665
Belar Electronics Laboratory	246	150	610-687-5550	Louth Automation	81	50	415-843-3665
B&H Photo - Video	274-277	163, 164	800-947-9928	Macrovision	263	141	408-743-8600
Broadcast Microwave Services	226	130	619-560-8601	Matthey Electronics Ltd.	293	171	
Broadcast Video Systems Ltd.	240	145	905-764-1584	Metawave	272	162	
BTI Computer Systems	60	36	408-524-9224	MGE UPS Systems	184	106	714-557-1636
Burle Industries	58	27	717-295-6123	Miranda Technologies Inc.	182	93	514-333-1772
Cablewave Systems	181	92	203-239-3311	MIT Inc.	80	43	
Camplex/Concept W Systems	265	142	316-342-7743	Mohawk/CDT	232	116	508-537-9961
Canare Cable, Inc.	157	97	818-365-2446	Mountaingate Data Systems	71-76		800-556-0222
Canon USA Broadcast Lens	9	11	201-816-2900	Multidyne Electronics	291	165	800-4-TVTEST
Canon USA Broadcast Lens	MAP		201-816-2900	Myat	292	170	201-767-5380
Christie Electric Corporation	124	63	310-715-1402	NAB Broadcasters	271	161	202-429-5350
Clark Wire & Cable	112	59	800-CABLE-IT	NDS	89	44	
Comark Communications, Inc.	123	62	215-822-0777	NDS	251	139	
Comark Communications, Inc.	221	125	215-822-0777	NuComm Inc.	56	25	908-852-3700
Comm/Scope Inc.	33	9	800-982-1708	NuComm Inc.	293	172	908-852-3700
Conex Electro Systems	242	146	360-734-4323	N Vision Inc.	38-39	18, 19	916-265-1000
CPI	169	89	415-424-4515	N Vision Inc.	40-41	20, 31	916-265-1000
CPI/Eimac Division	233-234		415-594-4000	OConnor Engineering	135	68	714-979-3993
CPI/Eimac Division	235	133	415-594-4000	Odetics, Inc.	MAP		800-243-2001
Datatek, Inc.	121	77	800-882-9100	Opamp Labs, Inc.	236	176	213-934-3566
Dielectric	126	66	207-655-4555	Ortel Corporation	290	160	818-281-3636
Digital Transport Systems	66	40		Allen Osborne Assoc.	230	114	805-495-8420
DPS	137	69	606-371-5533	Osicom Technologies Inc.	193	124	619-558-3960
DPS	MAP		606-371-5533	Pag Ltd.	MAP		081-543-3131
Di-Tech Inc.	241	144	516-667-6300	Panasonic Broadcast & TV	26-27		800-524-0864
DNF Industries	292	167	818-252-0198	Parker Vision	158-159	98	800-532-8034
Duracell USA	37	17	800-548-5489	Pesa Switching Systems	149	71	800-328-1008
Echolab Inc.	105	58	617-273-1512	Philips Broadcast Television	57	26	800-962-4287
EEV, Inc.	227	131	914-592-6050	Philips Broadcast Television	59	35	800-962-4287
Eletronica	177	103		Philips Broadcast Television	61	37	800-962-4287
Emcee Broadcast Products	245	149	717-443-9575	Philips Broadcast Television	63	39	800-962-4287
ESE	236	134	310-322-2136	Philips Components	MAP		401-767-4421
Euphonix	171	102	415-855-0400	Philips TV Test Equipment	197	110	800-421-0888
Fiber Options	186	108	800-342-3748	PiRod, Inc.	195	109	219-936-4221
Floral Systems Inc.	190	122	352-372-8326	Pixel Power Limited	267	155	
Folsom Research Inc.	77	41	916-983-1500	Prime Image Inc.	93-94		801-272-5352
Frezzolini Electronics Inc.	70	30	201-427-1160	Prime Image Inc.	141	80	801-272-5352
Fujinon, Inc.	153	84	201-633-5600	Prism Sound Ltd.	163	86	
Fujinon, Inc.	155	94	201-633-5600	PSP Digital Ltd.	259	153	
Gentner Communications	183	105	800-945-7730	Quantegy Inc.	97	49	770-486-2800
Gepco	126	67	312-733-9555	Quantegy Inc.	99	55	770-486-2800
Hannay Reels	222	126	518-797-3791	Quantel Inc.	11	12	203-656-3100
Harris Corporation/Broadcast Div.	3	4	606-282-4800	Quvis	25	14	913-272-3656
Harris Corporation/Broadcast Div.	45	34	606-282-4800	Quvis	MAP		913-272-3656
Henry Engineering	292	174	818-355-3656	Radamec	103	57	908-518-0685
Herman Electronics	293	173	305-477-0063	RGB Spectrum	114	61	510-814-7000
Heuris/Pulitzer	187	119	314-534-1514	Rosco Laboratories Inc.	165	87	203-708-8900
Hewlett Packard	199	118	800-452-4844	RT Set	125	65	408-988-2330
Hewlett Packard	MAP		800-452-4844	Sachtler Corp. of America	29	15	516-867-4900
Hitachi Denshi America	161	101	800-762-6405	Sanix Corporation	122	78	708-677-3000
Hoodman Corporation	294	301	310-379-6391	Schneider Corporation	124	64	516-643-5466
Hotronic Inc.	62	38	408-378-3883	Sennheiser Electronic Corp.	225	129	203-434-9190
Hughes Communications Inc.	269	156	310-607-4051	Shure Brothers Inc.	115	72	800-25-SHURE

ad index

	Page Number	Reader Service Number	Advertiser Hotline
Sierra Design Labs	200	117	702-831-7837
Sigma Electronics Inc.	90	45	717-569-2681
Snell & Wilcox Ltd.	15-17	6	408-260-1000
Snell & Wilcox Ltd.	30-31	16	408-260-1000
Snell & Wilcox Ltd.	68-69	29	408-260-1000
Snell & Wilcox Ltd.	100-101	56	408-260-1000
Sony Business & Professional	51		800-635-SONY
Sony Electronics Inc.	34-35		408-955-5493
Sony Electronics Inc.	95		408-955-5493
Sony Electronics Inc.	104		408-955-5493
Sony Electronics Inc.	107		408-955-5493
Sony Electronics Inc.	108		408-955-5493
Sony Electronics Inc.	111		408-955-5493
Specialized Products Co.	118	74	214-550-1923
Spencer Technologies Inc.	293	177	818-840-0907
Standard Communications	231	115	310-532-5300
Sterling Technology Inc.	292	169	203-272-7728
Tekniche	139	79	201-784-2288
Tekstil Industries Inc.	238	136	604-589-1100
Tektronix Inc./GVG.	84-85	52	800-998-3588
Tektronix Inc./Profile.	87	54	800-998-3588
Tektronix Inc./Measurement	49		503-627-2830
Telecast Fiber Systems Inc.	50	22	508-754-4858
Telect Inc.	243	147	509-926-6000
Telemetrics, Inc.	67	28	201-848-9818
Telex Communications, Inc.	185	107	800-392-3497
Telex Communications, Inc.	239	143	800-392-3497
Thomcast	109	175	349-031-00
Thomson Broadcast	86	53	800-882-1824
Thomson Broadcast	255	151	800-882-1824
Thomson Tubes Electroniques	116-117	73	201-812-9000
Tiennan Communications	MAP		619-587-0252
Trompeter Electronics	96	47, 48	818-707-2020
Utah Scientific	7	10	800-453-8782
Utah Scientific	MAP		800-453-8782
VDP Inc.	188	120	800-VIDCAD-6
Vela Research Inc.	223	127	813-572-1230
Video Accessory Corporation	156	95	800-821-0426
Videotek, Inc.	303	2	800-800-5719
Vinten TSM	13	13	888-484-6836
Wegener Communications	247	137	404-623-0096
Wheatstone Corporation	2	1	315-452-5000
Winsted Corporation	261	154	800-447-2257
Wohler Technologies, Inc.	257	152	415-589-5676
360 Systems	113	60	818-991-0360

sales offices

WEST

Duane Hefner
5236 Colodny Ave., Suite 108
Agoura Hills, CA 91301
(818) 707-6476
Fax: (818) 707-2313
E-Mail address:
dnhefner@aol.com

Susan Simon
3046-3 Lakemont Drive
San Ramon, CA 94583
(510) 735-7616
Fax: (510) 735-7626
E-Mail address:
ssimon@pacbell.net

Sue Horwitz
809 South Orange Drive
Los Angeles, CA 90036
(213) 933-9485
Fax: (213) 965-1059
E-Mail address:
76345,2624@compuserve.com

EAST

Josh Gordon
210 President Street, Suite #4
Brooklyn, NY 11231
(718) 802-0488
Fax: (718) 522-4751

EAST/MIDWEST

Joanne Melton
1775 Broadway, Suite 730
New York, NY 10019
(212) 641-5270
Fax: (212) 459-0395

INTERNATIONAL

Richard Woolley
Tony Chapman
P.O. Box 250
Banbury, Oxon OX16 8YJ U.K.
+44 (0) 1295 278407
Fax: +44 (0) 1295 278408

JAPAN

Orient Echo, Inc.
Masuyoshi Yoshikawa
1101 Grand Maison
Shimomiyabi-Cho 2-18
Shinjuku-ku, Tokyo 162, Japan
(3) +81 3235-5961
Fax: (3) +81 3235-5852

CLASSIFIED ADVERTISING

OVERLAND PARK, KS
Jeff Utter
P.O. Box 12901
Overland Park, KS 66282
(800) 896-9939 (913) 967-1732
Fax: (913) 967-1735

LIST RENTAL SERVICES

Lori Christie
9800 Metcalf
Overland Park, KS 66212-2215
(913) 967-1875
Fax: (913) 967-1897

BROADCAST[®] engineering

EDITORIAL

Brad Dick, Editor
Skip Pizzi, Technical Editor
Steve Epstein, Technical Editor
Dawn Hightower, Senior Associate Editor
Deanna Rond, Associate Editor
Jim Saladin, Editorial Assistant
Tom Cook, Senior Managing Editor
Carl Bentz, Director's Manager

ART

Stephanie L. Masterson, Art Director

BUSINESS

Raymond E. Maloney, President
Cameron Bishop, Senior Vice President
Dennis Triola, Publisher
Judson Alford, Associate Publisher
Eric Proffitt, Marketing Coordinator
Kathy Volkland, Advertising Coordinator
Annette Hulse, Classified Advertising Coordinator
Doug Conrod, Corporate Art Director
Barbara Kummer, Circulation Director
Leann Sandifar, Circulation Manager
Customer Service: 913-967-1711 or 800-441-0294

TECHNICAL CONSULTANTS

Jerry Whitaker, Contributing Editor
Eric Neil Angevine, Broadcast Acoustics
John H. Barrison, P.E., Antennas/Radiation
Dane E. Erickson, P.E., Systems Design
Donald L. Markley, Transmission Facilities
Harry C. Martin, Legal
Curtis Chan, Audio/Video Technology

MEMBER ORGANIZATIONS

Sustaining Members of:
• Acoustical Society of America
• Society of Broadcast Engineers
• Society of Motion Picture and TV Engineers
• Society of Cable & Telecommunications Engineers

Member, American Business Press



Member, BPA International



Affiliate Member,
International Teleproduction Society



BROADCAST ENGINEERING is edited for corporate management, engineers/technicians and other management personnel at commercial and public TV stations, post-production and recording studios, broadcast networks, cable, telephone and satellite production centers and networks. Qualified persons include consulting engineers and dealer/distributors of broadcast equipment.

SUBSCRIPTIONS: Non-qualified persons may subscribe at the following rates: United States and Canada; one year, \$55.00. Qualified and non-qualified persons in all other countries; one year, \$70.00 (surface mail); \$130.00 (air mail). Subscription information: P.O. Box 12937, Overland Park, KS 66282-2937.

Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Intertec Publishing, provided that the base fee of U.S. \$2.25 per copy, plus U.S. \$0.00 per page is paid directly to Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. The fee code for users of the Transactional Reporting Service is ISSN 0361-0942/1997 \$2.25+.00. For those organizations that have been granted a photocopy license by CCC, a separate system of payment has been arranged. Prior to photocopying items for classroom use, contact CCC at (508) 750-8400. Organizations or individuals with large quantity photocopy or reprint requirements should contact Chris Lotesto, (312) 840-8407. Microfilm copies of *Broadcast Engineering* magazine are available by calling or writing UMI, 300 North Zeeb Rd., P.O. Box 1346, Ann Arbor, MI 48106-1346. Phone: (313) 761-4700 or (800) 521-0600.

©1997 by Intertec Publishing
All rights reserved.



Cable modem deployment

I often try to forget about things that are persistently not yet real. Of course, the definition is my own, and therefore, not to everyone's taste. On occasion, I have been right: I didn't hold my breath for the Video Toaster over the, what was it, two-plus years of continuing vapor? And I'm still (not) waiting for the PAL version! But I have also been dead wrong. I would have bet the

DVD standard would take at least twice as long as it did to get real; mind you, since I predicted the release of these machines in January, the products took another delay caused by an audio standards disagreement.

There are other technology subject areas where my mind wants to laugh and my body wants to cry. One is in the interactive TV area. My first involvement was in 1978 at EMI where we designed, built and installed two-way

cable systems. They, and the systems I have seen since, have only succeeded in convincing me that the public is not interested in paying for interactive services. Those that are willing to do so are probably already hooked up to satellite systems, enjoying all the paid programming they want and/or connected to the Internet with multiple user domains (MUDs) playing all the games and fantasy situations they want.

Cable modems

I was going to do the same in attempting to ignore the cable modem business. I have actually taken a keen interest in the standards and devices being used, rather than the commercial nuances of the business. But a series of events forced me to do some basic arithmetic and my primitive detective work is not encouraging for the industry. Does the cable modem situation impinge on the broadcast business? You bet it does; the complications of where, how and when digital signals are carried into the home will directly affect the economics of the terrestrial decisions that broadcasters must make in the near future.

As of the beginning of the year, there were 27 cable modem manufacturers either declared or ready to announce products. These modems are based on seven known chip sets, with not all of the relationships or connections between companies known or understood. The fact that 27 players believe that there is a market, and money, in the deployment of the modems should

leave us to simply accept that fact. That really is a problem because the industry itself does not accept it.

Accurate numbers from the cable TV industry are a little difficult to extract, but it's probable that less than 20% of the cable infrastructure in the United States is ready to be equipped for two-way traffic. That, to me, seems critical to the universal employment of the cable modem, not for interactive video, but for the Internet. The provision of digital video signals is unimportant to the consumer, but the provision of a really nice wideband access to the Internet (6Mb/s?) will attract a lot of users, including me. A return path to the head-end, for surfing, via a slow modem and a separate ISP is not attractive. However, a wideband return path is attractive, which limits us to the 20% of systems that are ready. Add to that the fact that some of the most successful cable systems are extremely financially strapped and you have a recipe for a small disaster in implementation.

The cable industry estimates that the number of cable modems to be sold in 1997 will be around 300,000. That is not a viable number for 27 suppliers. With a "magic" price of \$199 for resale in the major electronics superstores, we have the probability that four out of the seven IC suppliers will not be far enough advanced to survive.

The actual technology associated with the cable modem is, in much part, the same as that needed for the satellite box with demodulator, error correction and MPEG decoder. The return path is, however, a technological wonder; if you think of all the thousands of drops that could be feeding back to the head-end, you start to realize that the signals are feeding common node points and adding to other nodes and then other nodes all the way up to a single destination. But whether a cable modem in the home is making a request back to the head-end, the noise associated with that path is always there, always adding. Only one company has, to my mind, made a creditable tested offering for the return path and that is Stanford Telecom, Sunnyvale, CA, who has been quietly supplying others with that capability. But I am curious: When it seems that every gas station has a two-way satellite link on the roof of the kiosk by the pumps to validate credit why can't we do the same with DSS?

Paul McGoldrick is a free-lance writer and consultant based on the West Coast.



Paul McGoldrick

Legal Eagle.



Serial Digital Proc Amp

The DPA-100 with *Auto Legal* keeps a keen eye on your broadcast signals.

There's no easier way to ensure a Broadcast Legal signal than with the DPA-100 Digital Processing Amplifier. With its one-button *Auto Legal* feature, the DPA-100 automatically forces a video signal to "Broadcast Legal" by using a phase coherent chroma clip for true dynamic correction. And, while the default is set to broadcast standard, you can easily change the settings to meet any transmission requirement such as microwave, satellite up-link, cable, or for production in the studio and on the road.

The DPA-100 is ideal for any 601 serial digital system including Non-Linear Video Editing, DVC Pro, D-1, D-5, Digital Betacam and Digital S. Real Time control over video parameters allows total adjustment of video, luminance and chroma gains, plus black level, hue shift and Y/C delay. At the touch of a button, you can initiate the active bypass to view the original signal.



A Digital System
Integration Product

Full EDH support is provided, including input verification, flag passing and output recalculation.

Our unique design allows 2 units to be rack mounted side by side in 1RU. The DPA-100 can also be used stand-alone in desktop or portable applications.

Simple, intuitive controls on both the DPA-100 and its optional remote makes both units a breeze to operate.

Make it legal with Videotek's new cutting edge design. Call today to find out more about this and other innovative 601 digital solutions that will let your standards soar to new heights.

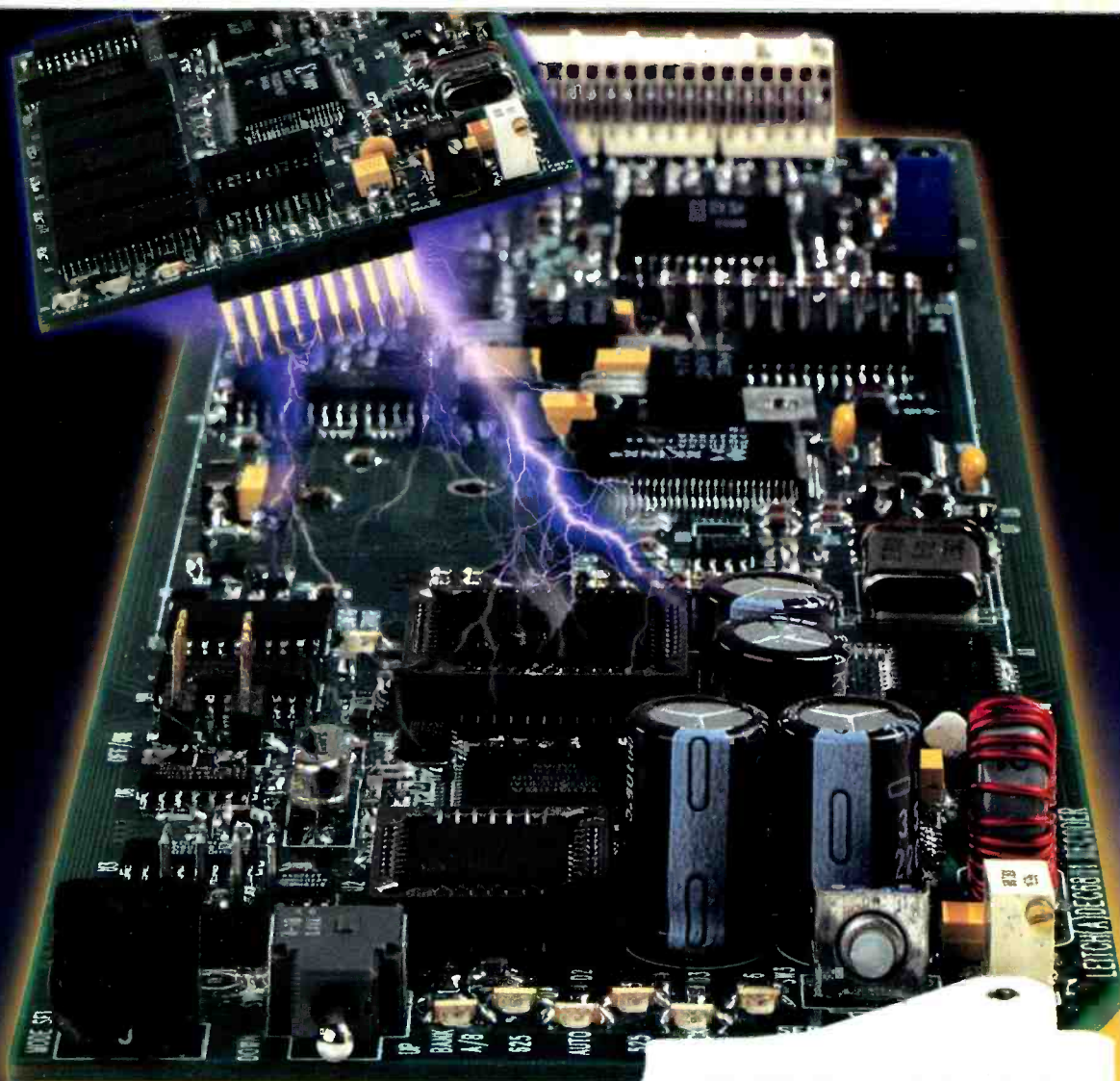
Premium Quality, Intelligent Design, Smart Price... That's Videotek.

 **VIDEOTEK**™
A Zero Defects Company

ISO-9001 Certified

243 Shoemaker Road, Pottstown, PA 19464 Toll Free: (800) 800-5719 (610) 327-2292 Fax: (610) 327-9295

Circle (2) on Free Info Card



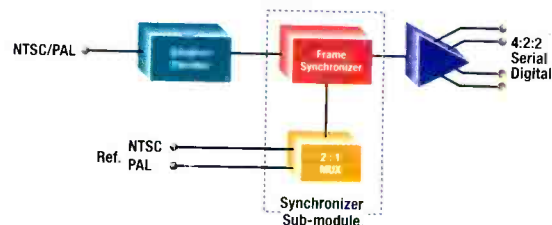
DES-6801

Getting from A to D



Decoding PAL or NTSC signals to 4:2:2 just got easier with new additions to the famous *Digital Glue* family of television products. The 3-line adaptive comb filter decoder DEC-6801 is used for A to D conversions in both PAL and NTSC formats and the DES-6801 (with a pre-installed sub-module) to both decode and synchronize incoming feeds to your facility. For digital 4:2:2 inputs, use the VFS-6801 digital frame synchronizer card.

Call Leitch for further details.



LEITCH®

International / Canada
Tel : + 1 (416) 445-9640
Fax : + 1 (416) 445-0595

U.S.A
Tel : + 1 (800) 231-9673
Fax : + 1 (757) 548-4088

Europe
Tel : +44 (0) 1256 880088
Fax : +44 (0) 1256 880428

Eastern Europe
Tel : +49 (89) 4900-2042
Fax : +49 (89) 4900-2043

Japan
Tel : +61 (3) 5423-3631
Fax : +61 (3) 5423-3632

Australia
Tel : +61-2-9999-2355
Fax : +61-2-9999-2366

Brazil
Tel : +55 (11) 867-0218
Fax : +55 (11) 867-0408

<http://www.leitch.com>

Circle (3) on Free Info Card