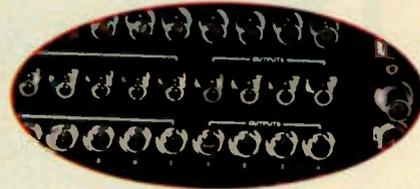


TECHNOLOGY

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Taiwan Broadcasting: A View From Inside

New Services Point to a Thriving Industry

by Jeremy Hoare

Editor's note: Free-lance lighting designer Jeremy Hoare recently completed a project for China Television Company of Taiwan. While there, Hoare got a first-hand look at the inner workings of CTV and the state of Taiwan broadcasting in general. He shares his observations with TV Technology readers this month.

TAIPEI, Taiwan

Because of Taiwan's relationship with mainland China, politics is always in the news. Television demonstrates its power by the fact that 95 people out of every 100 watch TV news.

With a population of nearly 21 million in 4.7 million households, Taiwan has an estimated 6.7 million television sets supplied

with programs mainly from three commercial stations: CTV, China Television Company; TTV, Taiwan Television Enterprise; and CTS, Chinese Television System.

In addition, satellite reception is estimated to be in one in three homes and Star TV's Mandarin-speaking Chinese channel has effectively become Taiwan's Channel 4 alternative to the three main networks. Because it is beyond the control of government regulations that restrict the Taiwan stations from showing Japanese programs, Star TV quickly drew ratings in its early days by broadcasting a Japanese soap dubbed into Mandarin. Star TV also shows Star Plus Channel, MTV, a sports channel and BBC WSTV. Other satellite channels available are CNN, two Japanese NHK channels and WOWOW.

LEGAL CABLE

Cable television has up until recently been operated by about 300 illegal operators reaching 1.6 million subscribers. However, a law passed last July will legalize them. Political parties will be allowed to operate cable systems, and at least 20 percent of programming must be locally produced. Foreigners will not be allowed to invest in cable.

A non-commercial public service station, CPTV (Chinese Public Television) struggles hard in this commercial environment with only 15 hours of air time a week. But

(continued on page 6)



— Television in the Magic Kingdom —
Euro Disney looks to broadcasters to air the spirit of the theme park.
See Story on Page 11

Shifts in the Tape Format Market See Page 4



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NEW TECHNOLOGY

PIONEER DEVELOPS BLUE LASER SYSTEM

TOKYO

In a development that could greatly increase the storage capacity of optical discs, Pioneer Electronics Corp. has announced that it has developed a blue laser system utilizing a wavelength of 425nm that is capable of operating at room temperature.

The system uses what it calls the "second harmonic generation" (SHG) method to halve the 780nm beam width of a standard red laser to produce the blue laser. The method involves passing the red beam through a crystal consisting of phosphoric titanium kalium (KT:OPO₄:KTP) developed by DuPont.

By reducing the beam width, Pioneer reduces the track width of optical discs, allowing more tracks per disc and, consequently, greater storage capacity. Pioneer expects to use the system to create CD-sized videodiscs capable of storing more than two hours of full-motion video.

Pioneer is also researching the creation of a blue laser directly from the laser diode.

PROGRAMMING

TV MARTI MAY BE SWITCHED TO UHF

WASHINGTON, D.C.

TV Marti, the United States government-backed programming service aimed at Cuba, is again ruffling broadcasters' feathers, this time over a plan to move the service to the UHF band.

TV Marti broadcasts from a balloon-mounted antenna in an attempt to deliver news and information to the citizens of Cuba. Although the service has been operating for a number of years, its effectiveness has long been the subject of controversy.

In addition, U.S. broadcasters have routinely complained of disruptions of service due to retaliatory interference from the Cuban government.

In March, a report submitted to the U.S. Information Agency, which operates TV Marti, recommended that the service be extended from its current five hours per day of programming to 24 hours. In addition, the report recommended TV Marti be switched to UHF band all the while acknowledging that barely a quarter of Cuban residents own UHF receivers. The report suggested that "inexpensive electronic kits" could be smuggled into Cuba to allow its citizens to receive UHF signals.

However, broadcast groups have criticized the report as being too vague and, in some cases, misleading.

According to a letter from Margita White, president of the Association for Maximum Service Television (MSTV), the report's

analyses "not only are inadequate but misleading regarding the potential interference impact on current full-power UHF broadcast stations in the United States."

The NAB, arguing that after \$70 million, TV Marti "still is not being seen in Cuba," said a UHF service "will be even less feasible technically than the one that has failed."

Among the complaints that both groups lodged with the USIA are that UHF channels are more easily jammed than VHF and that, with fewer UHF receivers in Cuba, the service will reach even less of its intended audience. Meanwhile, Cuba is expected to continue its retaliatory jamming of U.S. airwaves, interfering with both radio and television stations.

SATELLITE

NEW SATELLITE SERVICE LINKS U.S. AND EUROPE

PARIS

France Telecom has announced a new trans-Atlantic digital satellite service catering to the burgeoning market for television feeds between Europe and the U.S.

The service, set up by France Telecom, its U.K. uplinking subsidiary Maxat, and Keystone Communications in the U.S., uses Thomson's digital compression scheme on two one-way channels on the Intelsat satellite system. France Telecom made a "significant" investment in Keystone last November.

The new service will use Keystone and Maxat's teleport facilities in the U.S. and Europe, and will be coordinated from France Telecom's booking and switching center in Paris. Maxat owns an uplinking teleport in London, while Keystone has operations in Los Angeles, San Diego, New York, Washington, and Salt Lake City.

Gene Deck, Keystone's director of engineering, said the service would probably be extended across the Pacific in the future. "Keystone already has partnerships with KDD of Japan and Hong Kong Telecom for analog links across the Pacific," he said. "We will undoubtedly be going digital at some point, though this time with France Telecom."

NEW TECHNOLOGY

IDB DEVELOPS LIVE IN-FLIGHT SATELLITE SYSTEM

LOS ANGELES

Live television feeds to passenger airliners could become a reality in the very near future now that IDB Communications of Los Angeles has successfully tested a new broadbeam satellite system.

On a recent Swissair flight from Zurich to Tokyo and back again, IDB fed live CNN International programming to a satellite receive antenna mounted inside an MD-11 aircraft. The demonstration was conducted in coordination with ELTA, the electronics division of Israel Aircraft Industries using a satellite manufactured by INFORMKOSMOS of Russia.

Live programming to airliners via satellite has long been a goal of many airlines, but problems with tracking and satellite footprints, as well as bulky externally mounted receive antennas, have stood in the way. The system used by IDB features a broadbeam antenna that eliminates tracking concerns and can be mounted inside the aircraft.

"Basically, the antenna used was a prototype," said Michel Gelinas, vice president of corporate development and acquisitions at IDB. "It is a flat-panel, phased array antenna. We simply mounted it inside the airplane looking through one of the windows. When we reached Tokyo, we simply moved it to the other side."

Gelinas added that the final product will likely contain some type of directional mechanism that is expected to be fairly easy to develop.

Much of the remainder of the system used for the demonstration consisted of prototype equipment, except for SpectrumSaver codecs by Compression Laboratories Inc. of the U.S.

IDB envisions an airline satellite service consisting of about 10 channels. Gelinas said IDB will continue to work with INFORMKOSMOS to launch three satellites aimed at covering major airline routes in the northern hemisphere.

"Right now, traffic does not justify a service for the southern hemisphere," Gelinas said. "But if demand proves sufficient in the north, we could extend coverage to the south."

BUSINESS

DYNATECH GROUP REVAMPS UNITS

MADISON, Wisconsin

In an effort to increase coordination among its member companies, Dynatech Video Group has undergone a comprehensive reorganization.

Dynatech has consolidated its companies under two main product divisions: the Distribution Products Business Group and the Production Products Business Group. Comprising the distribution products group will be:

- Utah Scientific, a manufacturer of routers, distribution amplifiers, and automation equipment.
 - The router and signal converter products from Alpha Image.
 - D²S², the company's manufacturer of disk-based commercial playback systems.
- The production group will consist of:
- ColorGraphics, the high-end computer graphics company.
 - Quanta, a maker of digital text and graphics generators.
 - Alpha Image digital production switchers.
 - Cable Products, Dynatech's own unit aimed at cable automation systems.
 - Editing Machines Corp., the non-linear editing systems company that Dynatech recently acquired.
 - Calaway, a maker of PC-based editors.
 - Alta, offering still stores and special effects units.

Under the reorganization, D²S², ColorGraphics, Quanta, and Cable Products are being relocated to the company's main manufacturing facility in Salt Lake City. Two other companies, da Vinci Systems and NewStar, will continue at their present locations, maintaining their own manufacturing, as well as sales, marketing and support operations.

According to David Keller, division executive of the Dynatech Video Group, the reorganization is intended to foster greater coordination among the companies, resulting in greater compatibility between their products.

"We have a wide range of products, but not all of them communicate with each other or are on the same platform," he said. "In the future, you will see that change."

In addition to the relocations to Salt Lake City, European operations will be consolidated in Newbury in the United Kingdom.

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CONTINUED FROM PAGE 1

An Inside Look at Taiwan TV

this is due to change, as it will soon begin broadcasting on its own frequencies. Programs will be satellite-relayed from Taipei to 10 sites for UHF broadcast.

A feature of every city is MTV, a system of viewing rooms where people can watch films on video together. This is popular, no doubt because of the inherent gregarious nature of the Taiwanese.

CTV went on air in 1969 and was the first of the three stations to transmit all-color programs. Its studio complex was also the first to be custom-built in Taiwan

and currently comprises all the conventional equipment found in large TV centers throughout the world.

With a staff of around 800, it is on the air for about 20 hours each day covering an entire range of programs. CTV News, which is aired in seven segments daily, comprises 21 percent of the total output. Educational and public service adds 11 percent, and entertainment is by far the biggest sector at 47 percent.

The largest studio currently is 6,400 square feet and equipped specifically for

light entertainment shows.

The lightning grid, a barrel hoist system designed by the chief lighting engineer and made in Taiwan, has a sparse amount of Japanese-manufactured lamps rigged on it. Special lighting equipment is brought in as required, usually including movable mirror servo lights from the local Welline Company.

SHOOTING WITH SONY

On the floor are four new Sony CCD studio cameras with Canon J20 lenses mount-

ed on Vinten pedestals, as well as a portable camera on a Cam-Mate Hot Head crane. Sound is picked up with radio mics plus Sennheiser rifle mics on old Mole booms.

In the control room, lighting is performed with a Japanese RDS board, purchased seven years ago mainly because it was cheap. Other features are the Ampex Vision mixer feeding pictures to Sony D-2 recorders in the control room and a one-inch VTR.

The only separate room is Sound Control, where a UK-made Neotek sound desk is in use for stereo.

Two other studios, each comprising about 4,250 square feet, are used for soap operas and dramas. Each studio is equipped in a lightweight, practical way.

The two conventional news studios have three portable type Sony cameras mounted on Canon V-5 remote control heads for the main presenter's set, plus another two for captions and graphics. Fixed to the front of them are Canon CWP-50 prompters. The prompt source is a CTV-made device that uses paper, as Chinese is quicker and easier to write than type.

ENG stories are shot and edited on Beta SP by the reporters. Hi8 is being appraised as an economy for the future.

The main VTR system is one-inch with D-2 as back up. All post production is done on Sony D-2 through a DVS-8000 desk.

Program quality standards are variable, with some programs excellent and others bad. The constant Mandarin Chinese subtitles plastered over every program are annoying, but are regarded as partly educational for illiterate people. The ability to

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RAM RECORDER	YES	N/A	N/A
EXT ROUTER CONT	YES	N/A	N/A
TIMELINE	YES	N/A	N/A
FADER ZIPPER	NO	YES	NO
DELAY	YES	OPTIONAL	YES
EQ 3 BAND PAR	YES	OPTIONAL	OPTIONAL
HIGH/LOW CUT	YES	OPTIONAL	OPTIONAL
VARIABLE NOTCH FREQ.	YES	N/A	N/A
# OF METERS	8	4	8
# OF FADERS	16	12	16
MIX CHANNELS	20	16	16
MONITOR REMOTE	OPTIONAL	N/A	YES
DISK STORAGE	YES	OPTIONAL	N/A
MEMORIES	400	20/200 OPTIONAL	99
TONE OSC	10 hz to 15000	1 Khz	1 Khz
CHANNEL ID OSC	YES	N/A	N/A

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Program quality standards are variable, with some programs excellent and others bad.

send subtitles via teletext, which would give viewers the option to switch subtitles on and off, is being considered for the future.

The programs with the highest production standards are those made by independents, who contribute 50 percent of the schedule, as well as those imported from Hong Kong.

One modern-day soap with a high production standard has the pictures overexposed by 3/4 or more of a stop with a fog filter added. This gives very unsaturated colors and a vaguely surreal look that is pleasing to watch.

The main ratings success currently for CTV is an independently produced one-hour soap stripped five days at evening prime time. Set in 12th-century mainland China, it has exterior night battle scenes that are very well lit, but the interiors have an overall soft illumination that is completely bland.

The Taiwanese have an ongoing political dilemma with mainland China, and must contend with a lack of recognition by the United Nations. By nature, they are very hard-working and tend to look to the future, however uncertain it may be.

But in the world of television, Taiwan is thriving, expanding and most certainly has a future. There can be no argument about that. ■

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Fiber Technology Continues to Grow

by Roger Ewald

Fiber optic technology continues to evolve as manufacturers realize even greater efficiency and signal strength than what was possible even a few years ago.

At this spring's NAB show in Las Vegas, numerous booths highlighted fiber optic switching, transmission and reception equipment.

AT&T, the U.S. long-distance telephone company, demonstrated developments from its Network Cable Systems and Fiber Products divisions (Circle Reader Service 51). Specifically, the company showed products that support a fiber solution for serial digital transmission, demonstrating products by interconnecting to several other vendors at the show.

For instance, AT&T shared booth space with Force Inc., of Christiansburg, Virginia. (Circle Reader Service 81.) Force demonstrated its high-speed Model 2653 digital video/serial data link, which operates at speeds up to 1.2 gigabits per second (Gbps), which is suitable for HDTV.

NEW AT C-COR

C-COR/Comlux Inc. (Reader Service 116) had its new Model 3300 single-channel optical transmission terminal on display. The 3300 utilizes 9-bit video and 16-bit audio codecs to transmit transparent point-to-point signals over single or multimode fiber.

C-COR/Comlux also displayed its 3000 Series RF processors. The 3843 up/down converter accepts 45.75 MHz RF signals from scramblers for digital transmission.

As part of its "Dynoptics" line, DYNAIR Electronics (Reader Service 29) is offering the new DATA-Link RS-232 bi-directional data transceiver. The DATA-Link provides three separate channels of RS-232 data multiplexed onto one fiber for distances of up to 2.5 km.

DYNAIR has also added the Genesis digital interface. The Genesis system includes a complete selection of analog, digital and optical signal conversion and interface modules. The versatile DYNAIR 1200 Series of frames allows mixing of fiber modems and coax amplifiers and DAs in one package.

Fiber Options (Reader Service 38) displayed its new 1312B digital stereo audio link, which features 18-bit processing and a 48 kHz sampling rate. The 1312B can operate using single or multimode fiber. For less demanding applications, the model 312B is a high-quality analog audio link.

Fiber Options also showed the Series 240B video and stereo audio link. Fiber Options offers a complete line of audio, video, and data links targeted to the needs of broadcasters.

Grass Valley (Reader Service 104) demonstrated the MCF Series digital transmission system. The MCF frame provides up to six 10-bit video cards, each with two channels of 18-bit audio. Any stereo audio pair may be associated with any video channel and can be dynamically re-assigned by a remote terminal using MCF interface software.

The Australian company IRT Electronics (Reader Service 43) displayed the VA-503 wideband RF fiber link. Intended for transmitting a broadband RF signal, it features a 10 MHz to 600 MHz response and a 6 dB path loss over seven miles.

IRT also offers a 270 Mbps serial digital video link and a portable audio/video link.

Lighthouse Digital Systems, of Grass

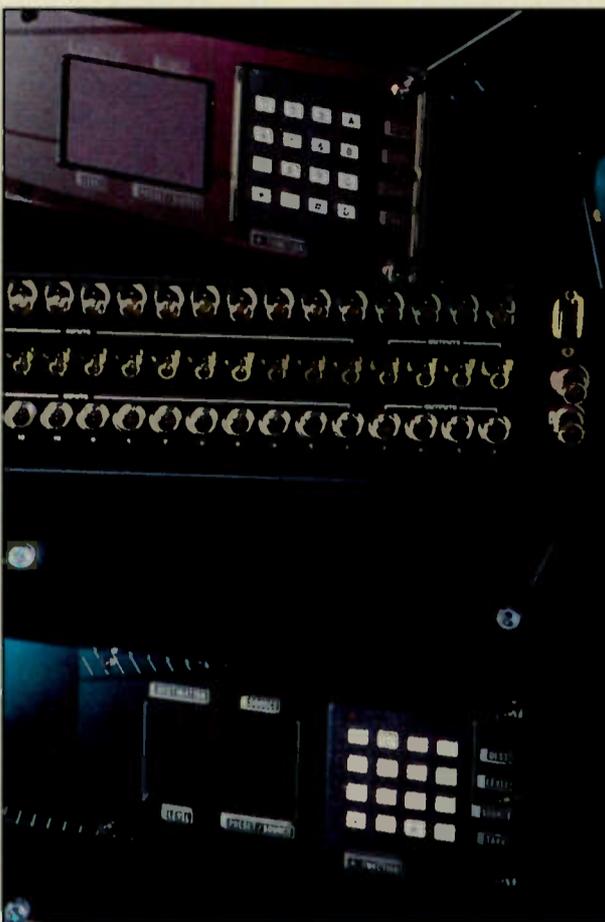
Valley, California, (Reader Service 79) brought three digital switching products: the SRX all purpose 400 Mbps unit; the Pathfinder 1.5 Gbps HDTV grade switcher; and the DCR 300 Mbps switcher.

Lightwave Systems of Dallas, Texas, (Reader Service 13) introduced the FIBOX two-channel high-speed fiber optic audio transmission system. Using 20-bit technology, the FIBOX claims a dynamic range of 108 dB.

Connectivity was the concept that Ortel Corp. (Reader Service 61) designed into its new System 8000 satellite interfacing link. Intended for connecting earth stations to distant control centers, the System 8000 provides direct fiber connection via single mode fiber for C and Ku Band, L Band, 70/140 MHz IFs and full duplex intercom and control systems.

Telecast Fiber Systems (Reader Service 32), makers of fiber optic snakes, introduced three new optical fiber products. The Viper, an audio/video snake, uses two separate enclosures to house all input and output connectors and internal elec-

tronics. The Viper is available in a portable configuration, with normal or ruggedized housings or in a rack-mounted version.



The Lighthouse line of SRX (top and center) and Pathfinder (bottom) switchers are two of the many fiber-based products available this year.

The Adder is a 64-channel digital audio snake available with 32 bi-directional channels or 64 channels in one direction. Each input is switch-selectable between mic and line level.

COBRA CONNECTION

Telecast's Cobra fiber optic triax interface is a unique device that, as its name implies, allows a triax camera head to be separated from its CCU by up to 10,000 feet of multimode fiber or even further with single mode fiber. The camera head requires its own power source, but the interface box will operate from either a 12-volt battery or AC mains power.

Telecast products come equipped with Anton Bauer snap-on mounting plates.

Telemetrics (Reader Service 36), specializing in camera remote control, demonstrated the prototype of its new fiber optic system. This new version offers all the features of the company's current coaxial model but uses multimode fiber to achieve distances up to 10 km. It will be available by fall of 1994.

The use of fiber optic media is growing quickly, largely due to the increasing data rates required by the various platforms and the need to build larger and faster networks. Broadcast and production equipment suppliers are taking this need very seriously and are finding solutions in fiber technology. ■

Roger Ewald is a television engineer for audio, radio and television services at the College of DuPage in Glen Ellyn, Illinois.

Audio Is the Key at Merjithur

by Alan Carter

COURBEVOIE, France

As sports enthusiasts gear up for the World Cup to be held this year in the U.S., the audio animation team at Merjithur Studios, located here in a suburb of Paris known for its concentration of production houses, is having fun with a match of its own: the Zoo Cup.

Participants for the World Cups finals are unknown, but the animated Zoo Cup series pits the Bulls against the Porcupines.

The crowd roars. There is the charging sound of the players bounding down the field. The thump of the kickoff. The swish of a pass. A referee blows a whistle for a foul. Boos erupt from the grandstands. Play starts again. Kick. Crunch. Swoosh. A score. A mix of cheering and jeering.

All in a day's work at Merjithur.

Sounds like fun? It is.

From sound tracks for cartoons and musical scores for films to audio mixes for radio commercials and jingles, Merjithur provides a variety of audio-only and audio-for-video production.

"We are one of France's leading studios of audio for cartoons," said Thierry Lebon, managing director of Merjithur. In addition to animation projects such as Zoo Cup, jobs include Coca-Cola and Marlboro clothing commercials for radio and television. Lebon also co-mixed the movie, "Little Buddha."

Among the array of equipment in the eight-track and 24-track studios is the Digigram Xtrack multitrack audio editing system. Lebon and free-lance engineer Laurent Kossayan credit the digital audio system with helping Merjithur produce many of its successful projects.

"We use it for the practical aspects and for the creativity it allows," Kossayan said.

He plays a section of the Zoo Cup video, while matching the audio track seen visually on an Xtrack workstation screen. The synchronization is off just a fraction. He squeezes the audio ever so little to get the sound just right with the video. He could also stretch the sound if need be.

Merjithur is one of the first production houses that used the Digigram Xtrack and continues to be a beta test site for the system. What appears to be an important aspect of Xtrack that Lebon and Kossayan like is the flexibility in both editing and use of source material, whether live or from the library.

They described a live mix from a six-way sound system: "If you haven't got the flexibility, the show will sound straight," Kossayan said.

Digigram promotes the flexibility and ease of use with the Xtrack.

Among the features in Version 3.21 software that Digigram recently introduced is that Xtrack can manage up to 16 independent tracks on four PCX boards in real time. Equalization also is available. It is applied independently on each track with three sub-bands: bass, medium and treble.

The input channel parameters allow users to assign an input channel and an output channel independent from each other to each track.

Processing functions also simplify operation. "Jog" and "Shuttle" functions enable a fast search.

An "Export Sound" function allows the generation of a MUSI-CAM file from a multitrack title. Format conversion, integration of volume curves and merging are applied globally to all tracks. This single file is used directly for broadcast.

For post production, the Xtrack with the new software can drive an external video tape recorder and the video image can be displayed on the control screen. These two functions allow users to simultaneously handle the image and the sound that is controlled directly on the Xtrack. ■

Alan Carter is editor of the international editions of Radio World, sister publication to TV Technology.

For information on Merjithur Studios, contact Thierry Lebon in France (telephone: +33-1-47-88-10-01; FAX: +33-1-47-68-78-68). For information from Digigram in France, contact Christelle Berger (telephone: +33-76-52-47-47; FAX: +33-76-52-18-44), or circle Reader Service 40.

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venues in the many shops have been slow, and Euro Disney is holding hotels that it otherwise would sell to chains if the real

editing products, argues that if its systems are being used to create finished programs, then they are, by definition, on-line.

to identify.

Where then for on-line? ■

Amiga Fonts for All Occasions

by John Spofford

COMPUTER VIDEO

The original Amiga operating system was designed with built-in system fonts. The designer's intention was to have a single source of fonts available for every Amiga application. This was not a new concept, even for 1986, as Apple had introduced the same idea with the Macintosh.

The Amiga's advantage over the Mac was its ability to use color. The original one-piece Mac used a low resolution monochromatic screen, and every Mac pixel was either black or white. From its inception, the Amiga could generate high resolution graphics and access a palette of 4,096 colors.

Early Amiga graphics programs also tapped into the Amiga's library of fonts. The ability to display high resolution fonts in color led to the development of specialized character generator software. In addition, it arguably started the desktop video phenomenon.

MAP READING

The Amiga uses bitmapped fonts. Bitmapped fonts are in reality a series of tiny computer pictures representing the image of each letter. Each of these pictures is a fixed size. Accordingly, a large range of alphabet sizes is necessary for any type style or font.

Amiga fonts are measured in points. Typical font styles range in size from a minuscule five points to very large 120 plus points. Points are a standard of measurement used for typefaces by the printing industry. Adapting this measurement to the computer screen, it sometimes helps to equate points with scan lines.

Although this analogy is not perfect, it will give you an idea of whether the font will work for video graphics. In terms of scan lines, any font under 25 points will not be legible after the computer screen is encoded to composite video. The fonts I use range from about 50 to 120 points in size.

The best thing that can be said for the Amiga system fonts is that there are literally hundreds available, and in many cases, they are free. About a dozen fonts are provided with the Amiga, with many more available in the public domain.

Now the bad news: Most Amiga fonts were developed long ago for dot matrix printers and tend to be very blocky when seen on a video screen. Some font designs use single lines, which flicker badly or create rainbows on video monitors. In my endless collection of Amiga fonts, perhaps 25 styles are useful for professional video work.

As you collect Amiga fonts, you will occasionally find a variant, the colorfont. Colorfonts are multicolored bitmapped fonts with an integral palette. Colorfonts are directly supported by the Amiga operating system and can be imported into most Amiga graphic programs.

KaraFonts (Kara Computer Graphics) are the most popular source of colorfonts. These are commercial libraries of colorfonts, which simulate the look of characters carved from engraved metal, glass, wood, granite and many other materials. In addition, they were designed specifically for video titling.

The disadvantage is that all bitmapped fonts are a fixed size. While any bitmap (including fonts) can be resized in a paint program or image processor, font images are especially prone to turning to mush when reduced or exhibiting blocky edges when enlarged by more than a few percent. If the size of a particular font is not in your collection, you are usually out of luck.

CHOOSING SIZES

As computer typography became more sophisticated, scalable fonts were developed to solve this problem. Unlike fixed size bitmapped fonts, scalable fonts are represented in the computer as points, straight lines and curves.

These mathematical descriptions can be used to create bitmapped fonts of any incremental size without excessively jagged edges. Two major sources of scalable fonts are Compugraphic Outline fonts, developed by AGFA Compugraphics Corporation (Telephone: +1-201-440-2500), and the more common PostScript screen fonts from Adobe Systems Inc. (Telephone: +1-415-961-4400).

Commodore added direct operating system support of Compugraphic Outline fonts with AmigaDOS version 2.0. Many Amiga applications gained access to scalable fonts with this addition. Outline fonts are an improvement to the Amiga font standard but have had virtually no impact on Amiga desktop video applications.

Only two or three outline fonts are provided with an Amiga. Additional fonts are licensed by AGFA Compugraphics Corporation and are only available in commercially available font libraries.

Most Amiga paint programs and some image processors support the outline fonts, but rescaling is very slow and the onscreen appearance of most font styles is not very good. Compugraphic fonts work well for printed output, but no character generators make use of them.

The development of Amiga-based character generators followed an evolution similar to that of the Amiga system fonts. Several early CGs actually used the available Amiga fonts. While these programs are long gone, some of their fonts live on in my Amiga font collection.

Developers of high quality character generators such as the Pro Video series from Shereff Systems (Telephone: +1-503-591-5984; FAX: +1-503-591-0224) and Broadcast Titler from InnoVision Technology (Telephone: +1-510-638-0800; FAX: +1-510-638-6453) used proprietary bitmapped fonts. These respective font libraries were designed specifically for video production and could be encoded to video without turning into a flickering mess.

Shereff Systems also pioneered font anti-aliasing, in which an additional palette color was designed into a font to double its apparent resolution. InnoVision also added anti-aliasing to its proprietary fonts, and after the introduction of the Amiga 3000, released Broadcast Titler 2 using the new Super HiRes screen mode (1472x480 pixels) for a true 35ns resolution. For several years Amiga character generators competed and thrived, and low end non-computer

CGs all but disappeared.

Late in 1990, NewTek (Telephone: +1-913-354-1146; FAX: +1-612-881-4835) finally brought its long delayed Video Toaster to market. The Video Toaster featured a built-in character generator that used yet another proprietary bitmap font. The Video Toaster basically wiped out the Amiga character generator market. This is unfortunate, as the original Video Toaster CG was a mediocre performer. Only in its third revision has the Toaster CG finally surpassed the character generators I have been using for years.

Scalable font technology has finally made its way into Amiga CGs. This new technology was simultaneously introduced by NewTek as part of the Toaster3.0 character generator software and by InnoVision Technology in Montage for the Video Toaster, as well as the standalone version Montage 24. Montage is a character generation, image manipulation and compositing program that works with and improves the picture resolution of the Video Toaster.

The Video Toaster CG gained scalable font technology by adopting use of industry standard Adobe Type 1 PostScript fonts. NewTek further sweetened this option by including a large library of PostScript fonts with the Video Toaster 3.0 software upgrade.

Toaster CG uses requestors into which the user types in the desired size in scan lines. Of the two scalable font implementations, Montage seems to work better. Montage uses an on-screen bounding box to interactively resize and reposition text with the computer mouse. In its initial release version, however, Montage could only rescale its own proprietary fonts.

By the time you read this, InnoVision will have released its PostScript Module for use with both Montage for the Video Toaster and Montage 24. According to InnoVision, this add-on module will allow users to scale

PostScript fonts in real time with an effective resolution of 1 nanosecond.

This allows users of Montage for the Video Toaster to use Toaster CG's PostScript library. More importantly, the module also adds PostScript compatibility to Montage 24 for those Amiga artists not using a Video Toaster.

MORE CHOICES

Access to PostScript has become an important issue. I frequently use a variety of Amiga typographic techniques, but each solution has a common weakness: a limited number of fonts.

For example, even though I have collected hundreds of Amiga bitmapped fonts, only a handful are truly useful. They do have their place in video production, as often a unique font is available from no other source. All Amiga paint programs and image processors support Amiga fonts, while most character generators can convert them to their proprietary format in a pinch.

I still use standalone Amiga character generators in my productions. Again, the problem with these programs (and this includes the original Toaster CG) is that the user is limited to the library of proprietary fonts.

In terms of typography, today's computer video customer is very sophisticated. Many clients often have a background in both advertising and desktop publishing, and they are very aware of the range of typefaces available.

They often show up with their PostScript book under their arm, already knowing which typefaces they intend to use and expecting them to be available. A character generator program with 10 (or even 50) available typefaces is no longer acceptable. It is only the adaptation of PostScript by NewTek's Video Toaster and InnoVision Technology's Montage that will fill this requirement on the Amiga platform. ■

John Spofford is the owner of SPOFFORD MULTIMEDIA, a computer animation and video production studio located in Exeter, N.H. He can be reached at +1-603-772-0624.

TECH TIP

Organizing Your Tools

by Larry Albert

Most shops have more than one set of Allen wrenches because of the numerous styles. There are U.S. and metric sizes, common bent types and those for insertion into an auxiliary handle, standard end and ball tips, and some that are regular hexagon type while others are splined. Combinations of the above styles exist and are commonly found, or misplaced, in shops.

Many shops have such tools "stored" as a pile of "mixed miscellaneous" in a box, tray or drawer. Other shops make a diligent effort to keep the different types separated; and, in some rare cases, organized.

Sometimes these tools do not get replaced with the correct set after use. Incorrect or omitted tool replacement will cause problems and lost time later.

U.S. and metric sets will have tools that are almost the same size. While these tools may look the same, they are not interchangeable because they do not fit precisely. When working on equipment with metric screws, it is no fun to select a tool which "looks right" only to discover that it is the wrong size because it is really a U.S.-size tool improperly placed in

the metric set. Time will be lost analyzing the problem. More time will be lost locating the misplaced metric tool.

Carefully sorting these tools into separate groups will solve this problem, but preventing them from becoming mixed up again is another problem completely.

One solution is to color code the wrench sets using different colors for different sets. You could spray paint each tool in each set, or paint a band, stripe or a dot of color on the tool with a brush.

If you store tools in their plastic cases, paint the tool so that the color marking is visible when it is stored in the case. You may also want to paint a few color stripes on the clear plastic cover for easy selection.

This color coding is very useful when putting tools back after a project because sorting all the tool types is easier. And if someone makes a mistake and mixes up the various sets, sorting and correcting the error is also easier with the color coding.

A little time now and a small cost in paint will save time in the future, and the ease of tool sorting and selection will eliminate some stress. And these days, who needs more stress? ■

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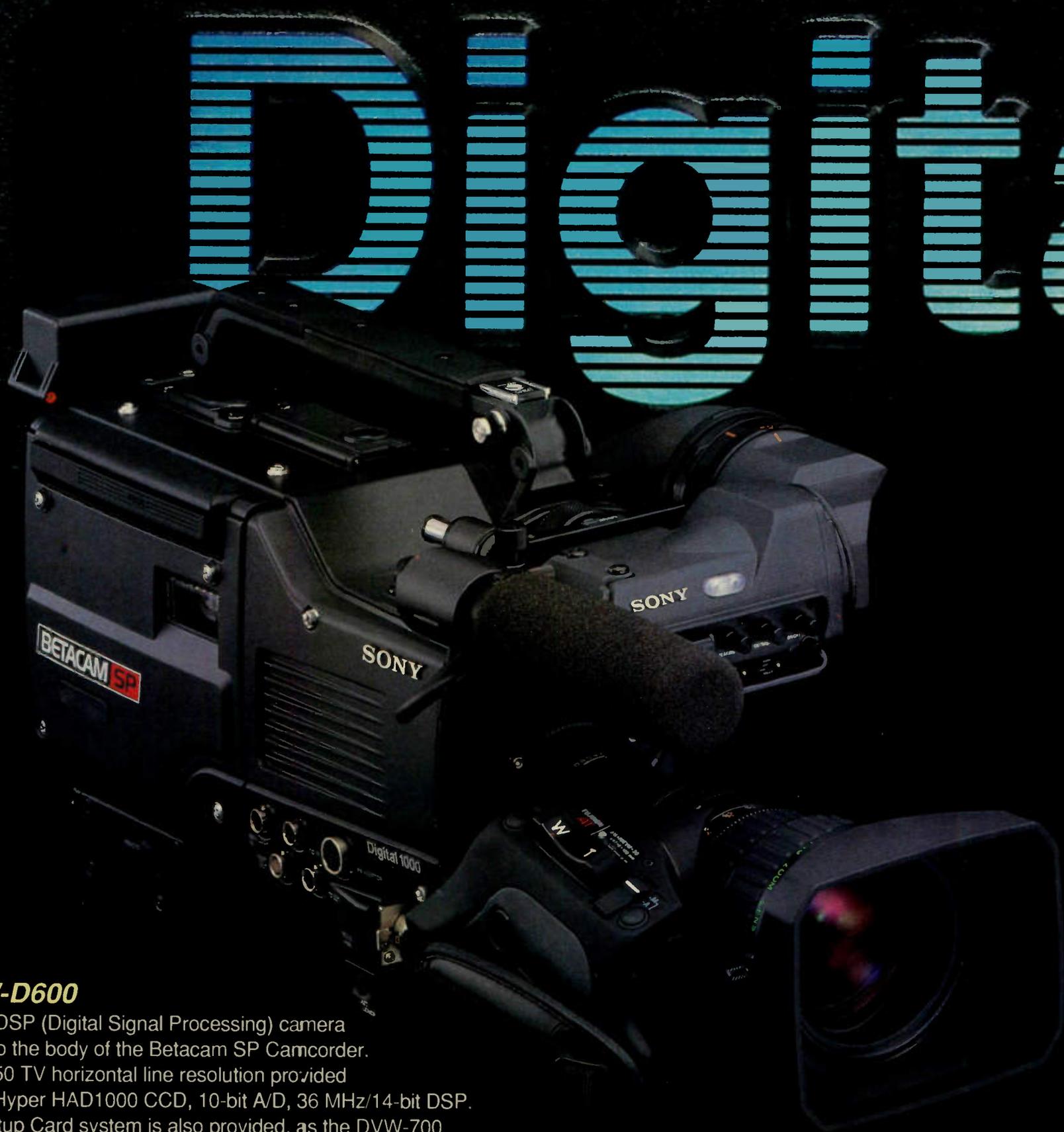
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Fiber In My Plant? I Think I'll Stay

by Mario Orazio



SOMEWHERE OUT THERE You might not have noticed that the phrase "dirt simple" does not apply to the future of TV distribution. Or maybe I should say "sand simple."

In essence, what I am trying to say is that there is more to fiber optics than melted sand. Several years ago, a Mitsubishi executive became quite upset when someone suggested fiber made of plastic instead of glass had limited uses. Plastic "can fulfill the needs of 80 percent of the current copper market," quoth he.

Anyway, I did not wake up my computer this month just to rant about the relative merits of plas-

tic or glass (and not just ordinary glass, mind you — glass that is so transmissive that it is to window glass roughly as window glass is to an opaque piece of cardboard). As they say on TV lawyer shows, I am willing to stipulate to the wonders of either plastic or glass optical fibers, including vast information carrying capacity, light weight, freedom from external interference and non-conductivity. As far as I am concerned, fiber is great, and I use it all the time to ship TV shows around the U.S.

COPPER IN THE PLANT

Around my plants, however, I still use copper, and I expect to do so for quite some time. The main reason is that last fiber advantage: non-conductivity. Let me give you a trivial example: triax camera cable, a technology that won an Emmy Award in 1992. A camera head squirts out red, green and blue video signals. It gets back viewfinder, sync, power and control signals. Heading both ways is at least one channel of intercom. Forgive me if I have oversimplified. In the good old days, cables with over 80 copper conductors connected camera heads to their CCUs. A 100-foot cable weighed 100 pounds and I, personally, once spent an entire day trying to repair one connector.

Along comes triax. All signals are modulated and sent down a single conductor, just as in a cable TV system. Even I, who have a hard time keeping a toothbrush aimed the right way, can field-install a new triax connector in usually less time than it takes to find the crimping tool. And for those cases when a camera needs to be mounted on a remote panning device (Louma crane, Cam-remote, Hot Head — whatever), all that is necessary is a triax-to-coax adapter or two.

I cannot remember who first showed fiber optic camera cable at an NAB show, but I remember RCA showing it, and RCA's been out of the video business so long that I recently ran into a young engineer (who had just learned what BNC stood for) trying to puzzle out the RCA associated with phono plugs; she was pretty sure the "C" had to stand for "connector." Anyway,

Around my plants . . .

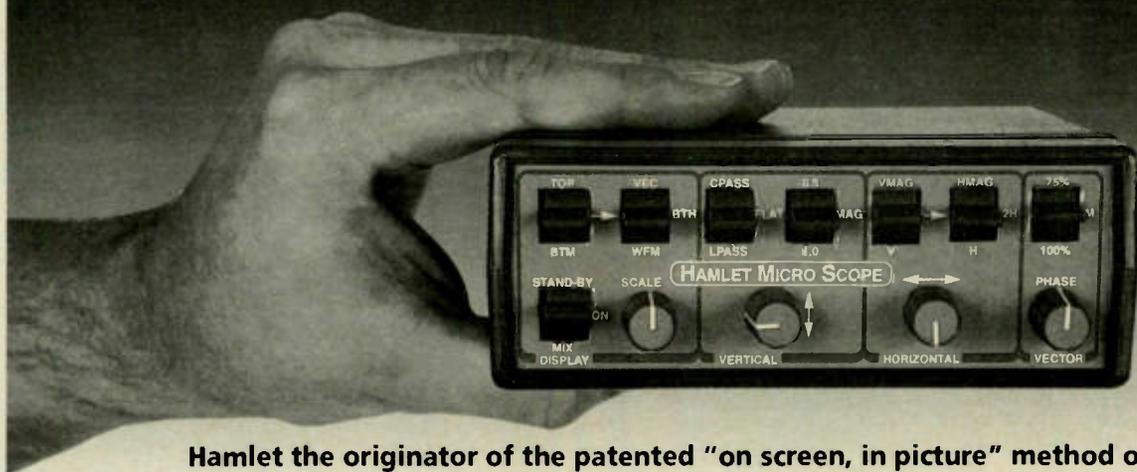
I still use copper, and I expect to do so for quite some time.

after these many years, the camera cable of choice is still triax, not fiber.

Why? Let me start with those remote panning devices. Mount a camera on one of those heads, and the first thing someone will try to do is spin it 360 degrees a number of times. If there were an ordinary cable connection from the camera to the CCU, somewhere between 360 and 7,200 degrees you are pretty much guaranteed to get either a strangled remote pan head, a popped connector or both. To avoid this, the pan head manufacturers use slip ring assemblies: 360,000 degrees is no tougher than 36.

Triax lends itself just fine to slip ring connections; fiber does not. I am not saying someone could not make some kind of rotary assembly with multiple electro-optic devices

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With Copper

and lenses; I am just saying no one has.

But, heck, you say; what about all those camera applications not using remote pan heads? Fine, let's go down the list together, shall we?

—Fiber is extremely lightweight. Triax is no backbreaker either, but it sure cannot compete with a strand of glass the thickness of a human hair. But if you lay that strand of glass on a golf course, the first golf cart to run over it will snap it. So it is true that fiber is extremely lightweight, and fiber optic cable with strength members added is not too bad, but it is not all that different from triax.

—At some point, the cable is going to break. Maybe a tank will run over it. Maybe it will get caught in a pickle slicer. A common term among technicians in the fiber transmission business is "backhoe fade." Like I said, even I can field repair a piece of triax. In the old days, field repair of fiber was all but impossible. Nowadays, it is possible, but it is not quite like triax. Look through any fiber optic trade magazine and you will see ads for 100-power microscopes, precision polishing kits and other devices. These gadgets are not exactly what you want to use on a muddy football field in the rain. Dirt is not terribly welcome in a triax connector, but it is a disaster in a fiber connector.

—Fiber is non-conductive, so it does not carry power. Therefore, the camera is on its own as far as power is concerned. Yes, battery technology has made great advances, but I do not think I would like to be concerned about changing camera, lens and fiber batteries all day long.

Of course, you could run some power conductors along with the fiber in the cable. To keep the voltage drop low, they will have to be of a relatively healthy gauge. But I have a better idea. Why not just continue to run triax for now?

The conductivity issue is one of the strongest keeping fiber out of homes (at the moment). The phone companies have two terms in their lexicon describing a part of what they do: POTS and BORSCHT. POTS is plain old telephone service (honest!). BORSCHT is what a phone company central office must provide to a subscriber loop (a phone line) to effect POTS. BORSCHT is battery (talk power), over-voltage protection, ringing (for the bell), supervision (to tell when the phone is picked up and what number was dialed), codec (for digital circuits), hybrid (two-wire to four-wire conversion) and testing.

TOUGH SHT

Fiber eliminates the need for O and should not have problems with C. SHT is, to put it mildly, challenging. The hybrid function needs to get moved to the other end of the line, and it is not easy testing loop resistance on a non-conductive loop. Also, supervision can no longer depend on DC through a relay coil.

B and R are pretty near impossible. Using high-power lasers, scientists at American Telephone & Telegraph (AT&T) in the U.S. have managed to get a phone at the end of a fiber to make a noise without applying any power other than light. But in the real world, supplying battery and ringing for a fiber optic circuit means one of two things: adding conductors to the cable or having the customer power the phone.

Adding conductors to a fiber camera cable

is maybe not a terrible idea. There is still video and audio to be carried in two directions on the fiber, whose freedom from interference can be a vital (one 12-camera triax shoot, in the RCA days, near an AM transmitter, was an utter disaster when the radio signal crept into the triax control stream).

Adding conductors to a POTS fiber is ridiculous. POTS is already carried on the exact same conductors that would be needed. What is the fiber supposed to do, besides sit there ready someday to supply HDTV and other non-POTS services?

As for customers powering their own phones, there is not a single technical reason it would not work, but it would be a

big change in the way things are done. Today, when the lights go out, you can pick up a phone and call the power company (or police, fire department or ambulance). When you do your own powering and have tested the batteries as often as you currently test those in your smoke detectors and flashlights, I guess you could send a letter when the lights go out.

Meanwhile, phone companies are figuring out ways to ship more down the existing conductors. ADSL (asymmetrical digital subscriber line) technology shoves about 1.5 Mbps (so far) down an ordinary POTS subscriber line over three miles from a central office, which translates into the capability to offer switched video on demand (ADSL offers POTS in addition to and simultaneously with the data).

The same POTS subscriber lines are also capable of carrying analog video. In the U.K., until pretty recently, cable television was carried to subscribers primarily by twisted pair. The video was modulated onto an HF carrier so everything fit neatly within one octave. The TV sets needed HF demodulators, while "tuning" was via a rotary switch that selected the desired pair.

UP AGAINST COAX

Anyway, all I have done so far is explain why it might take a while for fiber to replace triax and phone lines. I have not done much to explain why I am not so excited about replacing every piece of coax in my plants with fiber. There is a simple explanation: On the passive/aggressive scale, I have been told (often by the editors of this very publication) that I am a little aggressive. But on the passive/active scale, I am practically off the scale on the passive end. Some people say, "If you drink, do not drive." But I add, "If you drink, do not walk." To me, the single most important television invention in my lifetime was the wireless remote control.

So it should come as no surprise that I am not much in favor of replacing passive coax distribution with active fiber distribution. It is not just my exercise regimen. Active devices are a lot more likely to fail than passive devices. In a fiber distribution system, at minimum, each path requires a light source at one end (LED or laser) and a detector at the other.

Then there are connectors. Like I said ear-

lier, it is not devastatingly hard anymore to install a fiber connector. AT&T has shown people how to do it themselves at the NAB show. I recommend the experience, especially the part where you get to go to lunch while the glue dries. No, my concern about the connectors is simpler: Which one should I use? I read that the TR-41.8.1 committee picked two fiber connectors as "the" standard: ST for multimode and SC for single mode. The same place where I read that, I saw ads for fiber test equipment that uses just about any connectors except those: biconic, FC, D4, mini-BNC, Super PC, FDDI — take your pick.

FDDI, for those of you with video blinders, is the fiber distributed data interface, the digital interconnection system of the near future. If you want to get paranoid about not using fiber, just look up a year's worth of notes of FDDI's standardization

get it; the minimum you can get away with on an optical cable is a light source and a power meter. You cannot even look into a fiber and see if light comes out, since all fiber optic communications equipment operates in the infra-red range; look into a cable and you will see nothing, even as a laser proceeds to burn pits in your retina.

FIBER IDENTIFIERS

I especially like devices known as fiber identifiers. You know how fibers are completely self contained? These devices "sniff" the fiber non-invasively and tell you which way the light is traveling and maybe even what kind of signal is on it.

The way I see it, digital might be the key to converting my plants to fiber — serial digital, that is. I have no desire to stick added active devices on each end of each cable in my plants, but if I have to stick on serializers and deserializers anyway, I probably would not complain too much if the inputs and outputs were optical instead of electrical, as long as someone could point out some advantage to doing that. After all, serial digital is already less susceptible to problems like ground loops.

So, if there is a reason to do so, I am all set to switch to fiber. After there is a connector standard... and things get easier... and cheaper.

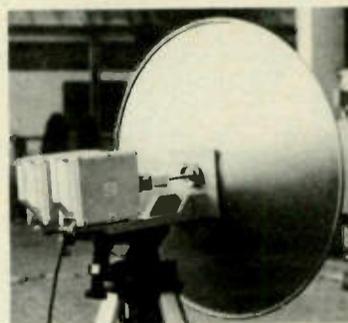
I am not being unreasonable, am I? ■

Mario Orazio is the pseudonym of a well-known television engineer who wishes to remain anonymous. Send your questions or comments to him through TV Technology.

You cannot even look into a fiber and see if light comes out . . . even as a laser proceeds to burn pits in your retina.



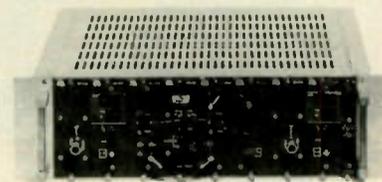
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Avoiding the All-In-One Trap

by Craig Johnston

PRODUCTION MANAGER

If upcoming equipment exhibitions follow a trend we have seen over the past decade, we are going to see more and more video production components evolving into combinations of equipment. Look for a character generator and the salesman will show you how you can get a paint system option added on. Shop for a DVE and a company may try to sell you a still store option for it.

These combination or multitask systems are very seductive. After all, for less than the price of two stand-alone components, you acquire the functions of both. Given that I am a big fan of the "post production-in-a-box" desktop editing revolution,

Several pieces of equipment combined into one tends to create a log jam because it is impossible to divide tasks between several production team members.

it may seem odd that I think that a combination character generator/paint system, for instance, may not be a good purchase.

My reasoning has to do with some very basic differences between post production editing and studio or remote video production. Post production is a one-man task. Video production of a newscast, talk

Multitask Systems Can Bog Down Your Production Unless You Plan Very Carefully

show, or ball game is more of an orchestral performance, with a number of players. Several pieces of equipment combined into one tends to create a log jam because it is impossible to divide tasks between several production team members. For instance, you will find that you cannot use the still store because the artist is finishing up his work on its paint system function.

Still, I think these combined systems can be attractive in financial and other ways. So how do you figure out if they will fit into your operation?

MAKE A TIMELINE

I suggest you construct a timeline, graphically depicting the use to which you presently put each piece of production equipment. Because most production schedules operate on a weekly cycle, you will need to do this for each day of the week. (It is likely that many parts of Monday through Friday are the same day to day, and that the two weekend days are also similar.) Although you may not have active production in progress through the

does a 6 a.m. newscast, commercial production in the studio from 10 a.m. to noon, tapes a local program in the afternoon and has an evening and late night news block.

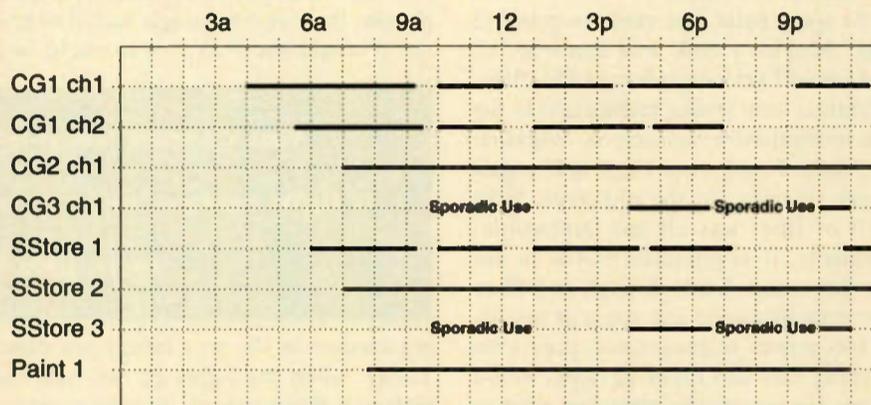
In addition to studio production, the facility also houses a post production suite

inputting news supers at terminal 1, although in the late afternoon terminal 2 is still in use for the local show taping. Similarly, I separate out each user terminal of a still store.

Also, I have depicted some times during the day when individual components are used only sporadically. In this timeline, character generator 3 and still store 3 in the graphics center are used only occasionally until an hour before the evening and late night newscasts.

From my analysis of the timeline, I see one equipment combination that may make sense. If I am looking for more paint system capacity, I can see that CGs 1 and

Figure 1.



and a graphics center. Post production opens at 7 a.m. and continues operation until midnight. The graphics center opens at 8 a.m. and operates until 11 p.m. Equipment is assigned as follows:

Studio: Dual User Character Generator 1
Still Store 1

Post: Single User Character Generator 2
Still Store 2

Graphics: Single User Character Generator 3
Still Store 3
Paint System 1

Because CG 1 in the studio is the dual user, I have depicted it as two lines on my chart. Prior to newscasts, one user is

2 are tied up for great periods of time during the day. To use a paint option on CG 2, for instance, means sacrificing post production time while it is in use. The same would seem true for still stores 1 and 2. However, the still store in the graphics center is sporadically used until shortly before the evening and late newscasts. If we can live with a paint system option to SS 3 (or CG 3, for that matter), that might be a good plan.

YES, BUT. . .

There are three observations you should keep in mind as you do this exercise:

— Just because you add a combination option to a piece of equipment does not mean the normal operator is going to be able to make good use of it. For instance, if you did find that a paint system could be added as an option to the post production character generator, you might also find that few, if any, of your post operators had the artist's skills to actually create graphics with it.

— Showing a timeline like the one in the example to a general manager or facility ownership might generate questions as to why you did not make use of the existing paint system between 11 p.m. and 8 a.m. the next day. You would want to be prepared with the fact that the clients for video paint projects (producers, news reporters, commercial production clients) need to be able to talk directly with the paint system artist and offer mid-project guidance. They are not going to want to do that at 2 a.m.

— If you end up adding an inappropriate combination option to an existing piece of equipment, in-station and outside clients are going to avoid it. They are going to find all sorts of reasons that their project has to be done on the state-of-the-art system, and everybody else can use the lesser system. It takes an iron hand to get them to do otherwise, and few of us really have that option. ■

Craig Johnston is the production manager at KDRV-TV in Medford, Ore. Write him c/o TV Technology.

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MARKETPLACE

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DIGITAL COMPOSITE MIXER

FOR-A has released the Dx-120 digital composite mixer. Designed for the medium-sized post production facility, the Dx-120 has 10 primary inputs, five key inputs, two full feature keyers, a full selection of wipes and optional drop shadows and chroma keyer.

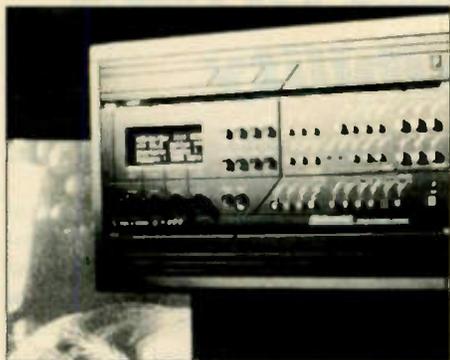
The Dx-120 can accept a mixture of composite digital and analog sources for ease of integration between digital and analog equipment.

For more information, contact the company in Japan at +81-3-346-0591; FAX: +81-3-349-8556, or circle Reader Service 76.

STANDARDS CONVERTER

The Alchemist standards converter by Snell & Wilcox is the first converter with a fully specified all-digital path.

Features include 10-bit digital processing throughout, component and composite digital interfacing and TBC and decoding capabilities.



When combined with Ph.C motion estimation, the Alchemist system eliminates artifacts commonly associated with linear standards conversion of moving pictures.

For further information, contact the company in the U.K. at +44-730-821188; FAX: +44-730-821199, or circle Reader Service 2.

LIGHT CONTROLLER

Frezzolini's Mini-Fill Intensity Control has a built-in dimmer control using pulse width modulation for adjusting light output.

With this feature, a user can get the performance of a 50 W light and a 100 W light from one bulb when using a 100 W lamp.

For more details, contact the company in the U.S. at +1-201-427-1160; FAX: +1-201-427-0934, or circle Reader Service 128.

SUBTITLING SOFTWARE

Comsatec Video of France has introduced ST-500-CODI software, a multi-language, high resolution subtitling program designed to control the Chyron CODI text and graphics generator.

The ST-500-CODI and CODI system allows users to create subtitling on a personal computer that can be displayed in English, French or German.

ST-500-CODI offers both text and time code editing and allows import of ASCII, Microsoft Word 4 (or higher) files from DOS and Macintosh platforms, flat files with predetermined separators, as well as files from the Quanta QCG 500.

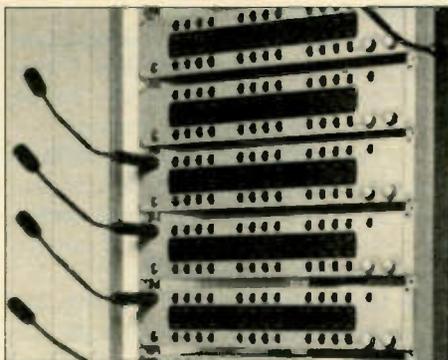
For more information, contact the company in France at +33-4117-7440; FAX: +33-4117-7441, or circle Reader Service 93.

TALKBACK SYSTEM

Trilogy Broadcast Ltd. has launched Commander, a processor-based talkback system.

Commander has a capacity of up to 380x380 ports and is suited to systems which may require future expansion or frequent changes in configuration.

Compatible with all common audio interfaces, including 2/4-wire, telephone handsets and radio systems, Commander offers a wide range of standard and custom-programmable panels.



For more information, contact the company in the U.K. at +44-264-332033; FAX: +44-264-334806, or circle Reader Service 133.

CONTROL PANEL

In order to eliminate operator error, the LCP3000 control panel by Television Systems Ltd. offers four 20-LED indicators that clearly display the current settings of audio or video VCA amplifiers.

The Tweak-Easy remote control system

offers adjustment of video gain and equalization, as well as audio gain, from several control positions or from a remote location.

For further information, contact the company in the U.K. at +44-628-773904; FAX: +44-628-773635, or circle Reader Service 122.

WIRELESS RECEIVER

The PR 900 UHF receiver from AKG is designed primarily as a portable non-diversity receiver for broadcast applications but can also be used in stationary configurations.

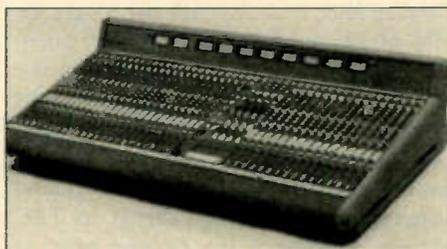
Battery operation allows the PR 900 to be used for ENG. Tuned to one TV channel, the PR 900 may be switched to any one of its twelve subchannels.

A stacking cable allows two PR 900s to be combined for diversity operation.

For more information, contact the company in Austria at +43-1-222-98-124-241; FAX: +43-1-222-98-124-205, or circle Reader Service 85.

AUDIO CONSOLE

Soundtracs has launched the Megas II Stage sound reinforcement console.



The Megas II Stage comes in four different frame sizes (30, 38, 46 and 54 rack units) and can be loaded with both mono and stereo input modules and a maximum of four matrix modules to provide an 11x8 matrix.

For more details, contact the company in the U.K. at +44-81-399-3392; FAX: +44-81-399-6821, or circle Reader Service 44.

GRAPHICS MODULE

The new Composer module for Getris Images' Studio Venice graphics and animation system enables users to combine graphics with live action video.

The Composer provides new tools for adding different foreground video to other video or graphic backgrounds and offers a greater range of creative faculty for Venice users.

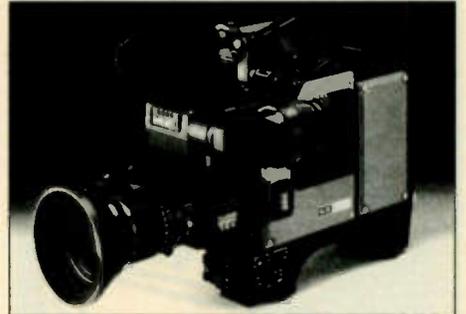
For more information, contact the compa-

ny in France at +33-76-90-1958; FAX: +33-76-90-7234, or circle Reader Service 62.

ENG/EFP CAMERA

The Ikegami HL-57 broadcast ENG/EFP camera uses digital picture processing for image quality that is higher than that of analog ENG cameras.

Because it is digital, the HL-57 offers easy maintenance and a higher specification, performance and stability over a long period of time.



The camera works with 2/3-inch FIT CCDs with 480,000 pixels.

For more information, contact the company in Germany at +49-21-31-1230; FAX: +49-21-31-102820, or circle Reader Service 75.

PARALLEL PROCESSING SYSTEM

Satlink UK Ltd. is offering The Warp System parallel processing acceleration systems featuring a 32-bit transputer processor with an on-board 64-bit floating unit that operates parallel to the main processor.

The transputer may be interfaced via the Warp Board library. This library contains various functions for uploading from the Amiga to the Warp Board and communicating with them.

A Warp Board is not limited to rendering, but the board does excel in areas where parallel processing may be used to improve performance.

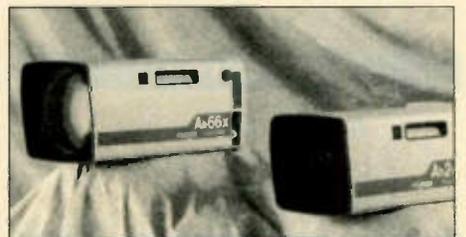
For more information, contact the company in the U.K. at +44-71-371-7471; FAX: +44-71-371-7494, or circle Reader Service 63.

DIAGNOSTIC SYSTEM

Fujinon has developed a self-diagnostic system to provide immediate analysis of its lenses' electronics systems.

This new system, called Focused Intelligent Network Diagnosis (FIND), is available as an option to the newest series Ah and Sh studio and field lenses.

FIND can be accessed either with an optional circuit board or with a personal computer.



For more details, contact the company in Japan at +81-48-668-2152; FAX: +81-48-651-8517, or circle Reader Service 91.

Send new product press releases along with black and white photographs to: Marketplace Editor, P.O. Box 1214, Falls Church, VA 22041

U S E R R E P O R T

Zaxcom Puts TBCs Under Control

by Mark Tyler
Staff Editor
Post Perfect

NEW YORK

The Zaxcom Time Base Correction (TBC) Hub remote system offers editors and technicians a unique advantage that they did not have a few years ago: the ability to change TBC settings from within the edit room.

The obvious advantage to having a remote TBC system in the edit room or master control suite is the ability to change levels while looking at the main room monitor. This is usually the most accurate color a technician will find at a video or broadcast facility.

Clients love the fact that when they ask for a color change, the editor is able to quickly make the change. It is easy to compare before and after setups by storing two or more setups for the same tape in different memories.

COLOR SETUPS

The Zaxcom system can store up to 15 color setups per machine in memory. That means an editor could put a tape on a machine, set it up, do an edit, change the tape several times and then retrieve the setup of the original tape when it is re-threaded.

Naturally, this sounds easier than it is. If an editor or an assistant does not keep track of which tape is in each memory, things tend to get changed.

When using the Zaxcom system, it is possible to enter a reel number for each memory, but very few editors that I have talked to actually require such a function. In big facilities such as Post Perfect, there are many video tape machines that are not dedicated to any one edit suite.

With the Zaxcom remote TBC system, any machine's TBC can be called into a room relatively easily. In the Zaxcom system, each machine has a local (at the machine) Zaxcom panel and is routable into a central Zaxcom Hub.

Any edit room in the facility with a Zaxcom Hub control panel can access the TBC of any machine. It is therefore possible to adjust the TBC of a machine in one part of the facility from elsewhere in the building.

Once the machine's TBC is acquired into the edit room, another edit room cannot acquire that machine and change its TBC settings. However, the Zaxcom panel at the machine is always active. If it is adjusted, it will affect the settings of the particular machine.

ADDING ON

When adding a machine into an edit room using the Zaxcom system, horizontal timing and subcarrier can be adjusted to put the machine "in time" with the room. The Zaxcom also has the ability to store alternate timing setups if a machine has to be shared between two rooms.

Another advantage of the Zaxcom system is the ability for correction levels to be stored directly to the edit decision list with each edit. Although doing this is a function of the editing computer, such as the CMX Omni, it is nice to know it can be done.

Remember, because each machine's TBC is slightly different, tapes have to end up on the same machines for this to be useful. A slight problem with this is that TBCs tend

to drift from day to day, so settings still have to be adjusted each day a tape is used.

Newer Zaxcom functions include auto setup and auto transitions between memories.

Broadcast technicians would also enjoy the benefits of a remote TBC system. When I first started in the television business, I was a master control operator at what was essentially a "one-man" shop. If I wanted to change the levels of a playback VTR, I would have to run across the machine room floor to change levels.

response: "How did we ever live without it?" I ask myself this whenever I have to use a machine that is not hooked up to the system.

Fortunately almost every one of the video tape machines at Post Perfect uses the Zaxcom TBCs. ■

Editor's note: Mark Tyler works in both on-line and off-line suites at Post Perfect. His video career began in 1984 as a master control technician at KDVR-TV, in Denver, Colorado.



The Zaxcom TBC Control System offers the ability to change TBC settings from the edit room.

Doing this left the master control booth unmanned in the event of an emergency, such as the transmitter going down.

Having talked to several editors about the Zaxcom system, I kept getting the same

The opinions expressed above are the author's alone. For further information, contact Glenn Sanders at Zaxcom (telephone: +1-201-652-7878; FAX: +1-201-652-7776), or circle Reader Service 64.

U S E R R E P O R T

Leitch DigiBus Offers Greater Flexibility

by Karl Heinz Wenisch
Engineer
InPhase Videotechnik

MUNICH, Germany

Have you ever sat down and designed the ultimate piece of equipment? Well, I wonder if you and all the others who did the same came up with different answers.

Let's look at the scenario: You want flexibility, modularity, adaptability to new standards, as many outputs as you need, universal control and many other good criteria. But does such a product exist?

The DigiBus from Leitch Technology Inc. (a new name for the company), is the ultimate in flexible, adaptable designs for digital engineering equipment. It consists of a standard three-rack-unit frame and individual module groups that are used to build functions. The application is for anyone designing, installing or running digital systems.

CONVERSION MAGIC

The system is typically used for analog-to-digital and digital-to-analog conversion, as well as encoding, decoding, delay and timing, to name a few examples. The main advantage is the system allows multiples of the same function or even different func-

tions to run together in the same frame under a single control system.

The DigiBus family consists of signal input modules, output modules and processing modules. You take the appropriate modules, physically group them together in the frame, and you have a function. Each frame has 14 front slots and 13 rear slots, providing the opportunity to house six functions in a single frame. A single function may take between two and five slots. If you have a function and want to add to it, you simply add another module, alleviating the traditional need to separately rack equipment and cable it up.

For a simple function such as parallel-to-serial conversion, you simply need a parallel input module and a serial output module cabled together in a DigiBus frame. If you decide that you need to synchronize or freeze the signal, just insert a frame synchronizer module in front of the output module. This takes the video signal off the internal bus, synchronizes it and puts it back in for the output module to level check and serialize as CCIR-601. This function takes up only two rear slots out of the 13 available, leaving the opportunity for other functions.

(continued on page 27)

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TECHNOLOGY UPDATE

Hamlet Keeps Signals in Sync

by Renato Lourenco
Chief Engineer
Sterling do Brasil

RIO DE JANEIRO

As suppliers to the vast base of professional broadcast, satellite and cable networks in Brazil, Sterling do Brasil is constantly required to provide the very best performance at the most cost-effective price.

Hamlet, inventor and patent-holder of the "in-picture, on-screen" measuring technique used in its Video Scope product, is already held in great esteem in this part of the world. So when we learned of the development of the Advanced time base corrector/frame synchronizer, we were anxious to see it in operation.

The unit's bandwidth offers flat operation at 6 MHz in PAL, NTSC, PAL-M composite and Y-C. It uses no compression, which would degrade the signal. Signal to noise is measured at 58 dB p-p/ms-RMS.

QUALITY PROCESSING

The enhanced quality of the Advanced TBC is due to the unit's 13.5 MHz processing, as well as its 8-bit 4:2:2 sampling and digital comb filtering.

Unlike the C100, the Advanced TBC does not have two inputs. But it does have built-in noise reduction, enhancement, strobe, freeze on loss of synchronized video input (something that can happen to the best of operations) plus optional 1,100 feet video equalization to eliminate line loss.

The Advanced TBC, like the C100, was designed for user convenience, with obvious consideration to operational constraints. The front panel is clearly labelled with control areas and can be easily remote-controlled from an RS-232 remote port.

Composite or YC channels can be selected for input or output. But where no compromise is allowed, the signal may be sent in its component form, providing a much higher quality transfer characteristic.

The processing amplifier controls include adjustment of luminance, chrominance, setup and NTSC hue. The control panel provides sub-control facilities, which are normally required at all times. These may be accessed by way of a shift button that activates the lower case functions, including television standards, subcarrier and horizontal phase adjustment, genlock or mono operation and the strobe control of rate and ratio. Further sub-control operations include corring, aperture control and freeze field 1, 2 or both for flicker-free freeze of moving pictures. The unit also conveniently provides processing amplifier level control memory for setting and storing the levels you desire.

The Advanced TBC synchronizer can be fitted in a single rack-unit enclosure, or it is available as a board that can be fitted into an IBM full-length computer slot.

One of the most useful aspects of the Advanced TBC is the way at complements Hamlet's latest waveform vectorscope, the PC Scope Plus, which I believe to be the very first full-specification unit to become available.

The PC Scope Plus is very useful where any computer is used for operations, whether on-line or off-line, or in a master control

area where multiple channels need to be monitored. Since the PC Scope can measure and monitor both audio and video to full broadcast specification, it is second to no unit I have seen.

HANDS-FREE TIMING

The PC Scope has many new facilities. One is called HFT (hands-free timing), which is a proprietary method to time signals.

In a shared unit situation, the three-step function set-up memory is a real advantage, enabling three people to have their own particu-

lar set-up. Additional useful features include a built-in black generator and 1/4-, 1/2- and full-size picture displays with combined, individual or mixed displays. For PAL operation, the need to turn the PAL switch off is also useful when setting up phase and looking at burst-to-chrominance errors.

Where the PC Scope card will not fit in the computer, Hamlet has invented the Micro Scope 301WVA, which performs all the tasks of the PC Scope but is enclosed within a small portable battery or 12VDC operated box mea-

suring 5x5x1 inches. More importantly, the Micro Scope can be operated from RS-232, just like the Advanced TBC/synchronizer unit.

The Advanced TBC/synchronizer will provide the means to enhance the quality of video productions, which in turn can be assessed during production with the PC Scope or Micro Scope. ■

Editor's note: As chief engineer at Sterling do Brasil, Renato Lourenco is responsible for technical operations and installations.

The opinions expressed above are the author's alone. For further information on the Advanced TBC, contact Steve Nunney at Hamlet (telephone: +44-494-775850; FAX: +44-494-791283), or circle Reader Service 39.

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U S E R R E P O R T

Home Shopping With Tektronix

Tektronix's VS210 video synchronizer.

by Robert B. Hall
Chief Engineer
Home Shopping Network

CLEARWATER, Florida

The Home Shopping Network (HSN) prides itself on a pioneering spirit. We effectively created the electronic retailing industry when we began our U.S. operation back in 1985. Today, our state-of-the-art facilities in St. Petersburg, Florida, house nearly 5,000 employees, the world's largest telemarketing center, and three program operations.

Three years ago, when we started new

studio construction, we could see how important digital and fiber would be.

Our programming originates from St. Petersburg, with many promotional tie-ins and special events, such as last year's Pre-SuperBowl show, produced on location and uplinked to satellite. In addition, we move lots of signals, both within and between HSN sites.

DIGITAL FUTURE

To start us on the path to a digital future, HSN Telemation, a sister facility eight miles away, has two C band dishes and one



Ku band dish for signal capture, and is linked to us by fiber. Our main location has three C band dishes and a Ku band dish plus five studios, two of which are digital.

We have a studio to support each of our three program services, Studio A for HSN1 (cable), Studio C for HSN2 (broadcast) and Studio F for HSN4 (Home Shopping

Spree). Another, Studio D, is dedicated to specials, including celebrity shows we produce in-house.

Studios A and C are digital. In the newer of the two, Studio C, a pair of Tektronix VS210 video synchronizers play a key role in keeping signals synced in a process that involves converting between serial and parallel digital.

We take a signal through fiber, convert it to NTSC, then send it to a composite serial digital converter. At this point, the serial signal is fed to a digital router, which sends it on to a deserializer so it can go through the Tektronix VS210. The VS210 locks the outside signal to the house reference.

A serializer converts the signal from parallel composite digital back to composite serial before being passed through a distribution amplifier. From there, it is sent to a composite digital switcher and back to the router.

I/O OPTIONS

Today, Tektronix offers a serial digital I/O option that would eliminate the serializers and deserializers in our system. With Option 1S, the VS210 synchronizer becomes the gateway for conversion from composite analog to composite digital and from serial composite digital to composite analog.

Because part of pioneering involves forging your own way ahead of the crowd, we set up our system before that option became available. As it stands, though, the flow sequence in Studio C is realistic, and the VS210s work quite efficiently.

The VS210 was an obvious choice for our system. We were using eight of its predecessor, the 110-S video synchronizer, and were as satisfied with its performance as we were with the VM700A video measurement set and various Tektronix monitors in use throughout our facilities.

Because it is fitted with both analog and composite digital inputs and outputs, the VS210 was ideal for a mixed analog/digital system like Studio C. Other features, like a 10-bit architecture and oversampling, deliver the accuracy and resolution we need.

If we are doing a remote (from Las Vegas, for example), we downlink to fiber, go to the fiber hub, fiber the signal to the appropriate program services, frame sync it and then take the signal to air. In Studio C, we do our own frame syncing with the VS210. In the other studios we use the 110-S.

As technology advances and disk recording, video-on-demand and other digital services become reality, you can expect to see HSN continuing its pioneering ways. And in the process of bringing new and exciting products to Home Shopping Club members, we will be taking advantage of the new and exciting products digital pioneers like Tektronix continue to offer. ■

Editor's note: Bob Hall is chief engineer of studio operations at the Home Shopping Network where he has worked for the last seven years.

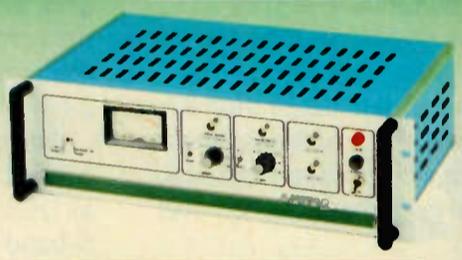
The opinions expressed above are the author's alone. For further information, contact Tektronix (telephone: +1-503-627-3124; FAX: +1-503-627-5801), or circle Reader Service 69.

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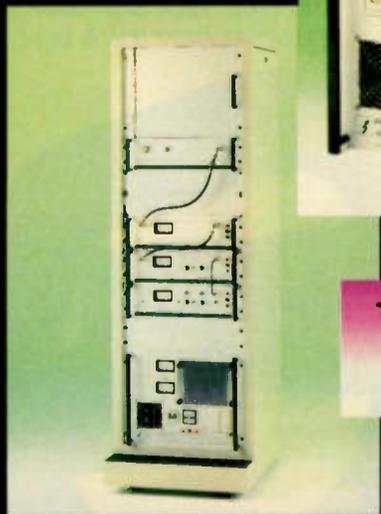
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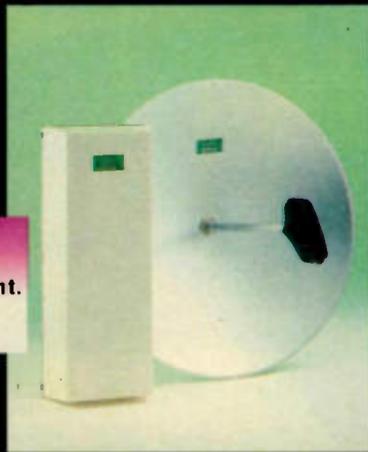
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T E C H N O L O G Y U P D A T E

DPS-365 Syncs to All Formats

by Claus Seidel
Videor Technical

FRANKFURT, Germany

In the spring of 1991, Videor Technical began distributing the DPS-365 universal synchronizer from Canadian manufacturer Digital Processing Systems.

As everyone knows, the German market is a bit different from the rest of the world. Before the final sale, there is always a series of acceptance tests, followed by more tests, and then still more tests.

This leads to a rather long decision-making process, but there is one important advantage. Once you have sold studio equipment in the German market, you will have no problems selling to the rest of the PAL market.

With distribution rights to Fujinon and Fuji Magnetics, Videor Technical is well-known in Germany. But it is always better to have a greater presence, so we are pleased that we have been chosen as the exclusive distributor of Digital Processing Systems

products to German-language areas.

One of the products that has drawn substantial interest from the professional video community is the DPS-365 universal synchronizer. The price/performance relation and the mass of special features found in the 365 has made it one of the most powerful devices on the market.

The 365 is now established at government and private broadcast facilities in Germany, and they are doing a perfect job in

OB vans, with one unit making a trip from Germany to Greece and back without any problems. They are also being put to numerous other uses where a need for reliable synchronizing is necessary.

During the last three years while we have been distributing the 365 throughout Germany, there was only one serious defect on a machine, and this was due to damage during shipment.

If ever there are special requests from customers, we have no problem responding because of

the very fast reaction from Digital Processing Systems in the U.K. and Canada. I think that there can be no better relationship between manufacturer and distributor.

One of the newest requirements in our area is compatibility with PAL PLUS. This is no problem for the DPS-365.

At the 1992 IBC show in Amsterdam, the 365 was tested against six established synchronizer brands. Only the 365 worked with PAL PLUS from the beginning.

With a wide range of television formats these days, one of the most valuable tools will be universal compatibility with all formats. This is one of the chief functions of the 365, which is why I think it is a product that every facility must have. ■

Editor's note: The opinions expressed above are the author's alone.

For further information on the DPS-365, contact DPS in Europe (telephone: +44-252-718300; FAX: +44-252-718400), or the main office in Canada (telephone: +1-416-754-8090; FAX: +1-416-754-7046), or circle Reader Service 67.

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BUYERS BRIEFS

The 1302 digital frame-store synchronizer from Questech Ltd. synchronizes digital video of any input phase to any output phase.

The unit's output phasing ranges are 64µ sec for horizontal and 625 lines vertical. Also featured are CCIR-656 inputs and outputs, digital reference input loop through and full bandwidth frame freeze in a 4:2:2 environment.

Front panel controls include freeze field 1 and 2, frame freeze, mode selection and increment and decrement controls for horizontal and vertical phase, strobed freeze and posterize.

For further information, circle Reader Service 9.

YEM offers the RS-1701C dual sync generator consisting of two sets of genlock boards plus an interface board with a change-over function and an alarm circuit. The unit utilizes a digital temperature compensating crystal oscillator and fully conforms to the RS-170A and EBU standards.

Included are 16 different test signals, four outputs for black burst signals and SC frequency stability to +/- 1 Hz.

For further information, circle Reader Service 119.

USER REPORT

ZDF Puts Ensemble Designs to Use

by Arnold H. Mueller
Editor
ZDF

MAINZ, Germany

In the film world, image control is not a concern during the editing process because it is done in the lab. When it comes to video editing, however, it is a major concern because the video editor must keep control over the signals coming out of the player at all times.

An effective way to achieve this task is by employing a time base corrector.

In the field of these devices, Ensemble Designs of the U.S. has been gaining popularity. The Ensemble unit combines the adjustment of all remote controlled parameters of the video signal with vast memory capabilities, especially in connection with editing systems like the CMX Omni 500 and Omni 1000E.

COPY EDITING

Video editing is a process of copying, in which quality flaws will be directly transferred to the master tape. And additional analog copies of the master will worsen it further.

Yet, with some types of editing, such as for news clips, signal adjustment is unnecessary. With news editing, it is often not possible since the material has to be cut as is. And with off-line editing, signal adjustment is entirely done in the subsequent on-line session. Again, if the camera original was film, quality control is left to the lab.

But in all other cases, the editor will be directly responsible for the image quality of the final product. Maladjusted chroma, video signal or setup will not only diminish image quality but could also result in a change of the overall mood of a particular scene.

Yet more parameters influence the signal. Out of sync values for horizontal timing

result in a horizontal image shift, which looks only too unpleasant in superimpositions. Burst phase shift will have an effect on the overall saturation in a PAL recorder.

In the visual judgement of an image, these flaws often go unrecognized. But this only enhances their dangers, especially with productions lasting over a number of days. If one does not want to accept scene-to-scene changes in color or brightness, reconstruction of previous time base values is inevitable.

However, thorough monitoring of the

An editor who is too concerned with technical issues puts his creative reputation at risk.

video signal snatches away valuable time, which is lost for creative video editing. Very often, directors do not have an understanding of problems not directly linked to the creative process.

An editor who is too concerned with technical issues puts his creative reputation at risk. One that cares too little will have problems during approval of the final cut.

The combination of Ensemble time base correctors with the CMX systems diminishes these problems considerably. The time base remote connector of the VTRs is simply connected to the appropriate port on the Ensemble via serial remote cable.

STRONG COMMUNICATION

The Ensemble communicates with the CMX edit controller and is initialized via the setup menus for each VTR individually. This allows the signal of each VTR to be adjusted by means of the Ensemble.

The Ensemble can either be integrated into the editing console deck or can be remote controlled. Either way, the video

signal can be controlled by a special menu via the CMX data monitor where all of the Ensemble's controls are emulated in software. Thus, the editor does not have to get up and adjust the VTRs locally.

Each temporary adjustment of the video signal is held in the Ensemble's memory (Register 0) and can be transferred into one of 99 separate registers for further reference. This can take place even with a time stamp to say when a certain "soft" signal correction should occur.

A default register serves the VTRs' default values. These can be produced at any time to reset a particular VTR back to standard.

Basically, I have described what I consider to be a rather comfortable remote control system for different VTR sources that maintains the same control layout, even for different makes of VTR.

Yet, the outstanding feature of the CMX lies in its capabilities to store the time base information along with the edit list. If the Ensemble upload/download function is activated from within the setup menu, each time a cut is recalled into the edit menu the according time base control adjustments will be passed from the Ensemble's memory straight to the VTR.

This makes it easy to recalibrate the source VTRs to yesterday's levels. The simple recalling of a cut from the appropriate tape suffices to recall the proper levels of chroma, video, setup, horizontal timing and burst phase.

In consequence, the invisible cut of the next day, meaning continuing an edit on a VTR that has been recalibrated in the meantime, has lost all of its horrors.

Another great time-saver is the fact that, working with a huge number of tapes requiring different levels of adjustment, the CMX units memorize each tape adjustment individually. All one has to do is recall the last edit done from the particular tape, and

all time base corrections are made by the VTR as previously set.

Now, the video editor can keep thorough control over the video signal without losing his reputation as a creative person. ■

Editor's note: Arnold Mueller has worked at ZDF since 1963. His 1992 book "Der Elektronische Schnitt" is a best seller in the German electronics field.

The opinions expressed above are the author's alone. For further information, contact Ensemble Designs (telephone: +1-916-478-1830; FAX: +1-916-478-1832), or circle Reader Service 53.

BUYERS BRIEFS

Hotronic Inc. has available the AF75 TBC/frame synchronizer that is compatible with S-VHS, VHS, U-Matic and U-Matic SP.

The unit is available with Y/C inputs and outputs and offers time base correction for heterodyne VTRs and full-frame memory synchronization.

Other features include constant H phase for matched frame edits, 4x subcarrier sampling with 8-bit resolution, adjustable horizontal and vertical blanking, and 3dB chroma noise reduction.

For further information, circle Reader Service 20.

The Nova 620 TBC from Nova Systems Inc. offers full frame memory to instantly freeze a field or frame for special effects.

The unit provides presets for front control panels, full color dropout compensation and 20x forward and reverse shuttle operation.

Also available is a black burst output from a built-in sync generator, as well as 8-bit, 4x subcarrier sampling and a test mode for applying color bars to the video signal.

For further information, circle Reader Service 135.

NVISION Inc.'s NV5000 series universal sync generator provides a timing reference for locking NTSC and PAL video, as well as AES/EBU and SDIF-2 digital audio to a common reference.

The audio word clock outputs are available in 48 kHz, 44.1 kHz and 44.056 kHz sampling rates simultaneously, and alignment tones for each frequency are selectable from the front panel.

The unit can act as a free-running master sync generator and timing reference with an accuracy of +/- .25 parts per million. It can also be locked to a 5 MHz rubidium timing reference or external video source.

Video color bars or black burst bars are available simultaneously at the video outputs.

For further information, circle Reader Service 42.

CONTINUED FROM PAGE 22

Adding Flexibility with Leitch

For a more complex operation, imagine a common European scenario. Start with a serial 4:2:2 frame synchronizer consisting of a serial input module, serial output module and video frame synchronizer, a total of three modules. Should the system require four channels of embedded analog audio in the serial bit stream, a typical solution would be to install a one- or two-rack-unit chassis with four audio analog-to-digital converters and a four-channel audio multiplexer. Also, the video signal would be cabled out of the frame sync into the new rack before output into the new signal path.

The with DigiBus, all this is unnecessary. The DigiBus scenario is to insert a four-channel analog input card next to, but up-stream of, the serial output card. Then, add a multiplex card down-stream of the video sync card. This provides embedded audio in a serial video stream without wires. In addition, Leitch's audio multiplexer card is also an audio synchronizer, allowing the operator to synchronize audio to video, if needed.

The DigiBus DigiNet control system automatically knows what modules are in a frame and then groups them into logical functions. As it does this, it provides full control on a UCP-3600, three-rack unit control panel. Control on the UCP is a miniature, built-in gas plasma display with a number of soft keys and hard keys that control dedicated functions.

Using the previous example, DigiNet would recognize the addition of the audio modules and automatically provide timing and level control at the control panel. DigiNet uses an Echelon-based

multiplexed high-speed serial data bus to connect between DigiBus frames on BNC connectors using standard 75 ohm coax.

Typically, the DigiBus system is used in both large and small digital video installations. It allows users to transfer between digital and analog for both audio and video, and it provides timing, synchronization, multiplexing and demultiplexing functions.

The main advantage of the system is its flexibility to allow multiple functions within a frame, thus minimizing interfunction wiring, simplifying installation and allowing control from a single point. It also allows for an immediate upgrade path, making the system virtually future-proof.

There is a great deal of interest in the DigiBus system here in Germany, but I know that there are also countless users located throughout the U.K., Czech Republic, Bulgaria, Italy, the Far East, Canada and the U.S. ■

Editor's note: Karl Heinz Wenisch is a member of a team of engineers who perform systems installations and other functions for such companies as ZDF, WDR, NDR and numerous high-end post production houses.

The opinions stated above are the author's alone. For further information on the DigiBus system, contact Leitch Europe (telephone: +44-256-880088; FAX: +44-256-880428), the company's main headquarters in Canada (+1-416-445-9640; FAX: +1-416-445-0595), or circle Reader Service 52.

U S E R R E P O R T

New Features at Prime Image

by Thomas Brunt
Technical Coordinator
Suburban Community Television

DOYLESTOWN, Pennsylvania

Suburban Community Television (SCT Productions) is a cable programming facility serving 80,000 subscribers in a tri-county region north of Philadelphia.

In addition to providing local programming, SCT also serves as an industrial/corporate production house, offering such features as A/B roll editing, multicamera van remotes and complete studio facilities. Like

many community stations, our programming is acquired and cablecast using 3/4-inch, Hi8 and even consumer VHS.

The trick is to successfully integrate these varied low-end tape formats into our on-line and master control systems. For more than three years, I have found great results with a Prime Image Model 50 TBC.

BACKBONE SUPPORT

In our small facility, the Model 50 is situated as the backbone of our master control system.

I have found the Model 50 to be very forgiving with these varied tape formats and quali-

ties (even for the client who brings us a dub of a home camcorder, VHS recorded at SLP).

Our facility, despite its size, is versatile in configuration. We have, in essence, three separate areas for production: our on-line edit suite with its A/B roll and Toaster system, our studio control with camera switching and master control with playback and recorders.

All three systems can work together simultaneously in a large production, or separate for individual use. The Model 50 TBC works well in this environment as a standalone TBC for cablecast and duplication use, or referenced to our house system for use as a TBC or frame sync for our studio or on-line edit suite.

I like the Model 50 for its rock-stable performance. The Model 50 was built as an economical "utility" TBC/frame sync with basic features (field freeze, 4.2 MHz bandwidth, 3 percent K factor, etc). After three-and-a-half years of continuous service, I have absolutely no problems to report.

The operation of the unit is simple: it is literally video in and video out (and of course, ref vid in/loop). The video processing controls (level, set-up, hue and chroma) can be preset for unity gain, which is what we usually use at our facility.

ECONOMICAL CHOICE

With such outstanding results from our first Prime Image purchase, it should be no surprise that our next TBC purchase was also a Prime Image, this time the new

Model 50/II. Priced some 43 percent less than the original Model 50, the 50/II sports improved specs (5.5 MHz bandwidth, 1 percent K factor) and many nice new features like full Y/C processing/transcoding, variable rate field/frame strobe and freeze, AGC and detail enhancement.

A look at the front panel reveals no potentiometers: all adjustments are performed with momentary contact switches. This takes a little getting used to, but the stepped adjustments actually provide for more accurate control than turn pot adjustments. The Y/C in and out is a nice feature for those of us using Hi8 and S-VHS.

We utilize the 50/II in our production van, and although it has only been a few months, so far it has stood up very well in our harsh van environment. The only thing I miss on the 50/II is a front mounted bypass switch. The only way to bypass the video processing is to disconnect AC power. However, the bypass switch is only really useful when the unit is operated in internal referenced standalone configurations.

All in all, I would have to rate both units as excellent. Solidly built and well-engineered, both of our Prime Image TBCs perform beautifully. Our original Model 50 has required no maintenance in its three-and-a-half years of operation other than an occasional internal dusting. ■

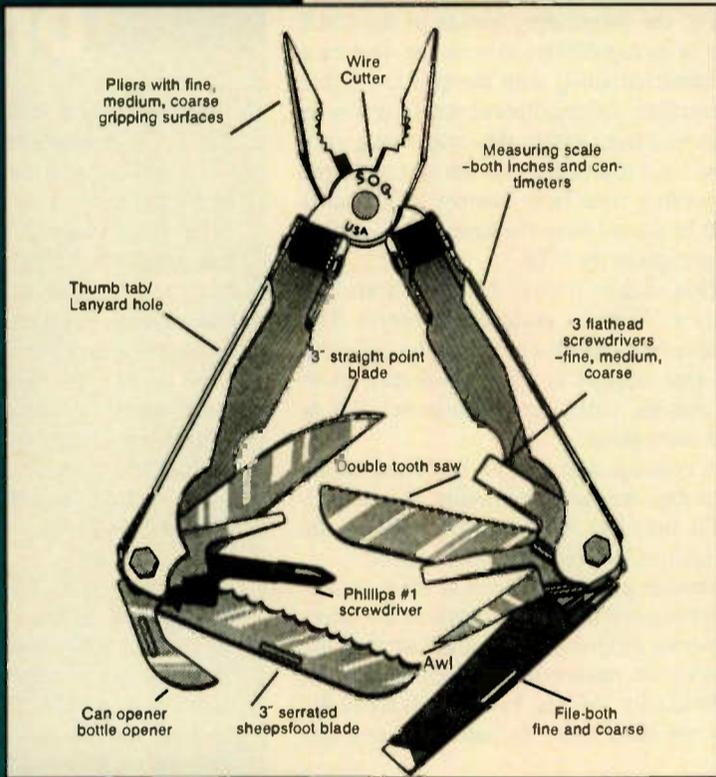
Editor's note: Tom Brunt has been with Suburban Community Television for more than eight years.

The opinions expressed above are the author's alone. For further information, contact Bill Hendershot at Prime Image (Telephone: +1-408-867-6519; FAX: +1-408-926-7294), or circle Reader Service 71.

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U S E R R E P O R T

Snell Sets a Standard

by David Richardson
Operations Manager
Breene Kerr Productions

MOUNTAIN VIEW, California

Breene Kerr Productions opened in 1982 in an effort to provide production, post production and duplication needs. We offer a complete range of services from satellite broadcasting, production and post production to duplication and standards conversion.

Our equipment includes Ikegami and Sony broadcast cameras, an Ampex ACE computerized edit system and an Ampex AVC 33 production switcher with 3 MEs, 10 keyers and 162 wipes. We also have an on-line Abekas DVE, on-line still store and graphics and computer control for two one-inch, two Betacam SP, two 3/4-inch and one D-2 VTR for roll-ins. In addition, we own the Snell & Wilcox TBS24 TBC/frame synchronizer.

The TBS24 was primarily purchased for time base correcting and synchronizing 3/4-inch, Hi8, S-VHS and VHS from our corporate clients. This enables us to provide stable output pictures for duplication or transfer to Betacam for on-line editing.

The TBS24 has a very good decoding circuitry using Snell & Wilcox's proprietary analog gate technology. This produces a very clean component signal at the output that we use to solve some interfacing problems within our facility.

We use the red, green, blue, and sync (RGBS) output of the TBS24 to interface to our Silicon Graphics workstation. This enables us to frame grab video into the workstation and manipulate the images. However, the RGBS output is only avail-

able on a nine-pin D type, and it seems each manufacturer has its own standard.

This has caused some problems in interfacing the nine-pin D type signals from the Snell & Wilcox TBS24 to the nine-pin D type of the Silicon Graphics workstation.

If you ever run into this pin-out incompatibility problem, the pin-outs for the TBS24 RGBS (9-pin D type) are as follows:

- Pin #1 = Blue signal
- Pin #2 = Blue ground
- Pin #3 = Green signal
- Pin #4 = Green ground
- Pin #5 = Red signal
- Pin #6 = Not used
- Pin #7 = Not used
- Pin #8 = Red ground
- Pin #9 = Sync signals

The TBS24 is a 1RU rack-mountable unit that we easily installed in our machine room. It provides two composite inputs, a Y/C input and a component input.

The TBS24 also provides simultaneous output of composite, Y/C, component and RGBS from the input signal selected. It is vitally important at our facility to make the most out of the equipment we have, and the flexibility of the TBS24 means we can use it for a wide variety of tasks. ■

Editor's note: David Richardson has worked in the video industry for 14 years, functioning as a producer, director, editor, audio engineer and production assistant.

The opinions expressed above are the author's alone. For further information, contact Snell & Wilcox in the U.K. (Telephone: +44-730-821188; FAX: +44-730-821199), or circle Reader Service 55.

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Sharp XC-700 (2) 3-tube w/ENG VF, studio VF, CCU, pwr sply, cables, no lenses, transportable carry cases, manuals, vpd, \$700/BO/ea; Sharp XC-A1 (4) 3-tube pickup, 2 w/ENG VF & lenses, tripod plate & manuals, 1 has no VF, no lens, 1 has no VF, no lens & bad tube but otherwise wkg cond, \$1200/BO; w/no VF or lens, \$750/BO; no VF no lens & bad tube, \$450/BO. Allan, 206-878-9677.

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Ampex ADO 3000 digital effects w/rotation, CP Key, input video proc, Digimatte in gd cond, \$20K/BO. 305-581-0026.

Q8/Quantafont char gen/dual chnl syst w/English & Spanish fonts, gd cond, \$7000; Quanta Paint electronic video graphic system, \$3000. R Bosque, Bosque Prod, 305-444-4456.

Showtime Video Ventures Showmaster colorizer & special effects unit, generates color bars, gray scale, various colors & patterns for bckgrnds, also adds audio color to the beat of the music, \$250/BO. A Kohout, 708-654-2700.

Sony DME 450 switcher & effects, \$2800; Video Toaster 3.1 030 13 MEG 240 HD, \$2500. Tom, Elliott Prod, 503-882-6824.

TEMMER VIDEO SPECIALS
MICROTIME ACT I, JAZZ ENSEMBLE, AMPLEX ADO, VIDEOTEK PRODIGY & GRASS VALLEY SWITCHERS
USA TEL: 212-206-1475 FAX: 212-929-9082

Video F/X non linear edit suite, Macintosh based NTSC, \$3000/BO. S David, Frontline, Radmangatan 3, 211 46 Malmo SWEDEN, 011-46-40-97757.

EDITING EQUIPMENT

Want to Sell

VHS editing syst, JVC BR8600U, BR7700U, RM86U, cntr, excl cond, lw hrs, \$3200. Ted, 800-753-3376.

Sony edit syst w/Sony 5800, 5850 rcds w/RM440 edit cntr & 2 Panasonic S13N monitors, \$6500. B Lineberger, VFP Inc, 704-545-1300.

Sony 5850 (3) 3/4" edit decks, lw headwear, Videomedia Eagle II w/Microloc, w/all cables & documentation, \$9000/BO. PEM, 734 Rte 110, Melville NY 11747. 516-421-4800.

For A FA-210 digital TBC, excl cond, \$995. J Winslow, Creative Video, Box 7032, Endicott NY 13760. 607-754-1029.

JVC 3/4" edit syst w/CR8250U, CP5550U, RM86U edit cntr w/cables, TC capable, tech manuals, gd cond, \$1900. 916-381-6222.

Sony BVU 950, excl cond, \$7500; Paltex AR 2000 auto ramp gen for KM 2000, \$600; Paltex Abner A/B cntr w/time code & Sony 500 series interface cables, \$2500. 201-797-2444.

Comprehensive Edit Lister software release 3.0, original discs & documentation, \$250. G Johnson, Stimulus, 415-558-8339.

JVC BR-8600U VHS edit rcd, less than 450 hrs, very clean, \$1500/BO; JVC CR-8250 U-Matic edit rcd, excl cond, 400 hrs; JVC CR-5550 U-Matic edit plyr, clean, 600 hrs; JVC RM-86U edit cntr, 45-pln, will sell as pkg, \$3000; other access avail. Jeff, CINECAN, Ontario CANADA. 705-525-1801.

MOVIE PRODUCTION EQUIPMENT

Want to Sell

Videonics Super 8 repeater projector w/old out screen on side of projector, \$125; Elmo 16CL optical sound projector, unit is not a film to video transfer unit, \$400. J Baltar, Maine Reel, 67 Green St, Augusta ME 04330. 207-623-1941.

Bolex ECM Electra, sync & variable motors, cables for sync, Angenieux 12/120, 400' Mg plus 2 extra lens & case, \$2000; Magnasync Moviola M-79, 3 sync heads, 2 MG heads & motor driven, \$500; Magnasync Moviola table top, \$250; Moviscop, \$200; hot splicers (2), \$100/ea; 4-head synchronizers (3), \$100/ea; set rewinds, \$50; long arm set rewinds, \$75. B Lineberger, VFP Inc, 704-545-1300.

PEDESTALS

Want to Sell

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SIGNAL PROCESSING

Want to Sell

Crosspoint Latch 8200 dual TBC w/5 input switcher, digital effects, audio follow, DSK, external pattern input, internal sync gen, \$950. Dave, Ryan Video Prod, 201-625-5804.

Rane GE-27 (2) 27 band graphic equalizers, \$275/ea; Tapco 2200 10 band stereo graphic equalizer, \$175; Tapco C-201 10 band stereo equalizer, \$199; JBL 6290 stereo pwr amp Monster amp 600 WPC, \$595; Shure SE-30 (2) field audio mixers, 3x1, as is, \$75/ea or BO. Tony, 201-429-1108.

Fortel Y-688 TEC gd cond, needs some work, no manual, \$500/BO. Mike, 20 Liberty Ship Way, Sausalito CA 94965. 415-332-8489.

Panasonic AGIA100 component transcoder, almost new, \$1000; Time Line Micro Lync w/parallel cntr for 5800 & Beta serial cable, like new, \$2000. 201-797-2444.

CVS 516 digital TBC, gd cond but needs to be calibrated, \$250/BO; Panasonic AS-2000 vgc, \$125/BO. Allan, 206-878-9677.

TV Technology's Equipment Exchange provides a FREE listing service for all broadcast and pro-video end users. Brokers, dealers, manufacturers and other organizations who sell used equipment on an occasional basis can participate in the Equipment Exchange on a PAID basis. All free listings run at the discretion of the publisher. Call 1-703-998-7600 for details.

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SWITCHERS

Want to Sell

Panasonic WJ-MX12 A/V mixer with owner's manual, mint condition, \$1450/BO. Hank, Newsvision, POB 5124, Chatsworth CA 91313. 818-968-1237.

GVG Horizon HX64 64x32 or 32x64 routing switcher, mono/audio, no control box, \$15500. T Lee, TTL Eng, 2025 Kenilworth Ave, Los Angeles CA 90039. 213-383-0426.

Shlntron 12X-C4 12 input switcher, no controllers, excellent condition, \$250/Best Offer/each. Allan, 206-878-9677.

Echo SE-2 video switcher w/sync generator, Intercom & tally system, manual incl, \$1500. B Specter, Specter Video, 4148 Windsor St, Pittsburgh PA 15217. 412-521-1444.

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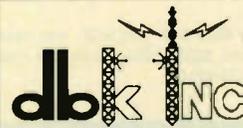
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Circle (123) On Reader Service Card

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Want to Sell

Moviola 4 gang sync block w/mag head, never used, \$100; 16mm sound film projector. J Karnik Prod, 248 Village Green Rd, Encinitas CA 92024. 619-436-2308.

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Sony BVS-3100 6 months old switcher, \$8990. 614-882-2228.

Panasonic AG-SW800 3 input, Y/C & composite, 4 audio channels, use with remote control or can be controlled via 9 pin serial interface for A/B roll & computer based editing or editing with AG-A800, has wipes, dissolves, down stream keyer & blackburst; Panasonic AG-RM800 remote control for AG-SW800, full manual operation of AG-SW800, 4 channels of audio control, normal/reverse video effects, key control, multiple input selections, excellent condition, \$3200/BO. A Kohout, 708-654-2700.

Alta Centaurus Still store/switcher w/hard drive, light use, \$8000. B Richardson, 800-848-9752.

VIDEO PRODUCTION EQUIPMENT

Want to Sell

Laird 1500 char gen w/1032 encoder, augmenclia software & 70 fonts, \$3000. J Gershon, Majec Video Prod, 913-894-1188.

Quanta Orion SE. 30 MEG HD, 72 anti-aliased fonts, RGB component & composite output, 74/ns resolution, \$6500/BO. B Bachynsky, Vision World, 612-633-7736.

Echolab SE-2 4 camera input wipes, dissolves, other effects, gd cond, \$400/BO; Panasonic WJ-545P (2) w/manual, in gd cond, \$75/BO/ea. Allan, 206-878-9677.

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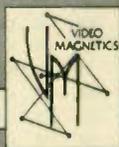
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Canon L-2 Hi-8 camcorder, new cond in orig cartons, 15X interchangeable lens, remote, 4 new batts, pwr sply/chgr, \$2400. J Karnik Prod, 248 Village Green Rd, Encinitas CA 92024. 619-436-2308.

Panasonic 200CLE w/15x9.5, case, plate, cable, pwr sply, \$2500. 703-527-1200.

Panasonic CLE 200 3-chip camera w/12X Canon lens, batt, pwr sply, tripod plate, cable & case, lw hrs, \$3200. J Winslow, Creative Video, Box 7032, Endicott NY 13760. 607-754-1029.

Panasonic WV250 3-chip camera, ENG config, focus & zoom cntr kit + 5" studio viewfinder, \$4000. AZ Enterprises, 1370 E Beltline, Richardson TX 75040. 214-495-0844.

Sony DXC-M3A w/hard carrying case, plate, like new, \$1500; Sharp X-8000 3-tube camera, working cond, \$600; JVC 3-tube camera w/carrying case, plate, pwr sply & batt chgr, 3 batts, VTR cable, \$300. R Bosque, Bosque Prod, 305-444-4456.

Panasonic F-250/AG7450 160 hrs, mint, w/original boxes, manuals, warrantee cards, case & PortaBrace airline legal soft carryon bag, \$5200. B Harden, 619-225-8327.

Sony BVP-30 3-tube Plumbicon camera, head only, tubes in gd cond, \$2000/BO. Jeff, Cinecan, Ontario CANADA. 705-525-1801.

CAMERA ACCESSORIES

Want to Sell

Fujinon TCV-75/80 1.8X teleconverter lens for front barrel DIA-750 for 3 tube video cameras, BO. M Tabas, Lawyers' Video, 33 Rock Hill Rd, Bala Cynwyd PA 19004. 610-668-1119.

TEMMER VIDEO SPECIALS

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CANON J25X11.5 25X LENS W/2X EXTENDER

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Redline batt belt quick chgr, \$90. Tracks Video Prod, 800-351-6053.

Showtime Video Ventures camera pwr sply & gen-lock adapter, provides sync to match 2 cameras or VCR & camera, \$150/BO. A Kohout, 708-654-2700.

Arriflex S sync & variable motor, 400' Mg & motor, Angenieux 12/120 lens & case, \$2500. B Lineberger, VFP Inc, 704-545-1300.

Canon J12x10 BKRS clean. Yves, Cinecan, Ontario CANADA. 705-525-1801.

DIGITAL EFFECTS

Want to Sell

Pinnacle 2010 DVE workstation, excl cond, \$4000. PEM, 734 Rte 110, Melville NY 11747. 516-421-4800.

VIDEO PRODUCTION EQUIP...WTS

Digital FX non-linear Macintosh based editor/switcher, CG, paint & on-line machine cntrlr incl 200 Postscript fonts, Photoshop, Illustrator & more software, \$4500. 614-882-2228.

VCR/VTRS/RECORDING MEDIA

Want to Sell

JVC CR-4400LU 3 decks, \$250/ea. Dave, Ryan Video Prod, 201-625-5804.

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Sony VO-8800 3/4" SP port w/PortaBrace, excl cond, \$1275. Tele-media Prod, Rt 4 Box 99L, Staunton VA 24401. 800-296-4192.

Sony VO-5600, \$1000/BO; Sony VO-5000, \$550/BO. The Video Group, 817-640-7221.

Sony VO-8800 3/4" SP port deck with BKU-706 time code board & PortaBrace case, excellent condition, \$2250/BO. M McCleary, One by One Video, 210 Cherry Ave, Voorhees NJ 08043. 609-354-0074.

Ampex VPR-80 in excellent condition with TBC6 cables, manuals, new heads, 3K UPS on scanner, trades considered, \$14K/BO; Sony BP-90 (3) batteries with charger, good condition, \$300/all. Mike, 20 Liberty Ship Way, Sausalito CA 94965. 415-332-8489.

JVC CR600 3/4" rcdr/edit source, \$2300/BO; JVC CR850 3/4" edit rcdr, \$3500/BO; Panasonic AU60 MII edit rcdr, \$6000, all very clean w/cables & service manuals. B Jones, Digital TV Prod, 1015 Clifford St, Pullman WA 99163. 509-332-5858.

JVC CR 850U 3/4" edit VCR, excellent condition, \$3500. B Richardson, 800-848-9752.

Panasonic 6400 (2) port VHS, \$700/ea; Sony 5800 & 5850, gd cond, \$2500/ea. 201-797-2444.

Panasonic TQ2024F vgc, \$500/BO; Panasonic TQ2023F runs but needs some work, \$200/BO. Allan, 206-878-9677.

Sony VO5800 3/4" rcdr/plyr w/address trk time code option, for use as frame accurate source w/edit syst, excellent condition, presently in service, \$2500. G Johnson, Stimulus, 415-558-8339.

Sony BVU 110 port 3/4" rcdr & case, \$400. Craig, 201-377-3753.

JVC CR-4700 3/4" rcdr w/time code, PortaBrace & batts, \$1300. J Gershon, Majec Video Prod, 913-894-1188.

Panasonic 7500A excl cond, well kept, 2000 hrs, \$2650; other equip avail. Tony, Brooklyn NY. 718-259-4442.

Panasonic 9500A 3/4" VCR/editor, excellent condition, \$450/BO; Jatex edit cntrl for 9500A or Sony 5850, \$300; Sony 4800 3/4" port VCR w/PortaBrace case & manual, \$350. B Spector, Spector Video, 4148 Windsor St, Pittsburgh PA 15217.

Sony VO-6800 port 3/4" U-Matic rcdr, 400 hrs, excellent condition, \$1000 firm; JVC CR-4900U port 3/4" U-Matic rcdr, immaculate cond, hardly used, 100 hrs, c/w new PortaBrace case & strap & AC adaptor/chrgr, \$1000. Jeff, Cinecan, Ontario CANADA. 705-525-1801.

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Panasonic AG-7400 S-VHS port deck w/flying erase head, case & manual, excl cond, \$1595. J Winslow, Creative Video, Box 7032, Endicott NY 13760. 607-754-1029.

JVC CR 6060U 3/4" rcdr & JVC CP 5000U 3/4" plyr \$300/both + shpg. Howard, 502-937-1140.

Sony 4800 3/4P port VCR, new head, gd cond, \$250. R Bosque, Bosque Prod, 305-444-4456.

Panasonic 9250 (3) U-Matic rcdrs w/batts & chrgr, \$900/ea; Nagra 4.2 1/4" tape rcdr, \$1750. B Lineberger, VFP Inc, 704-545-1300.

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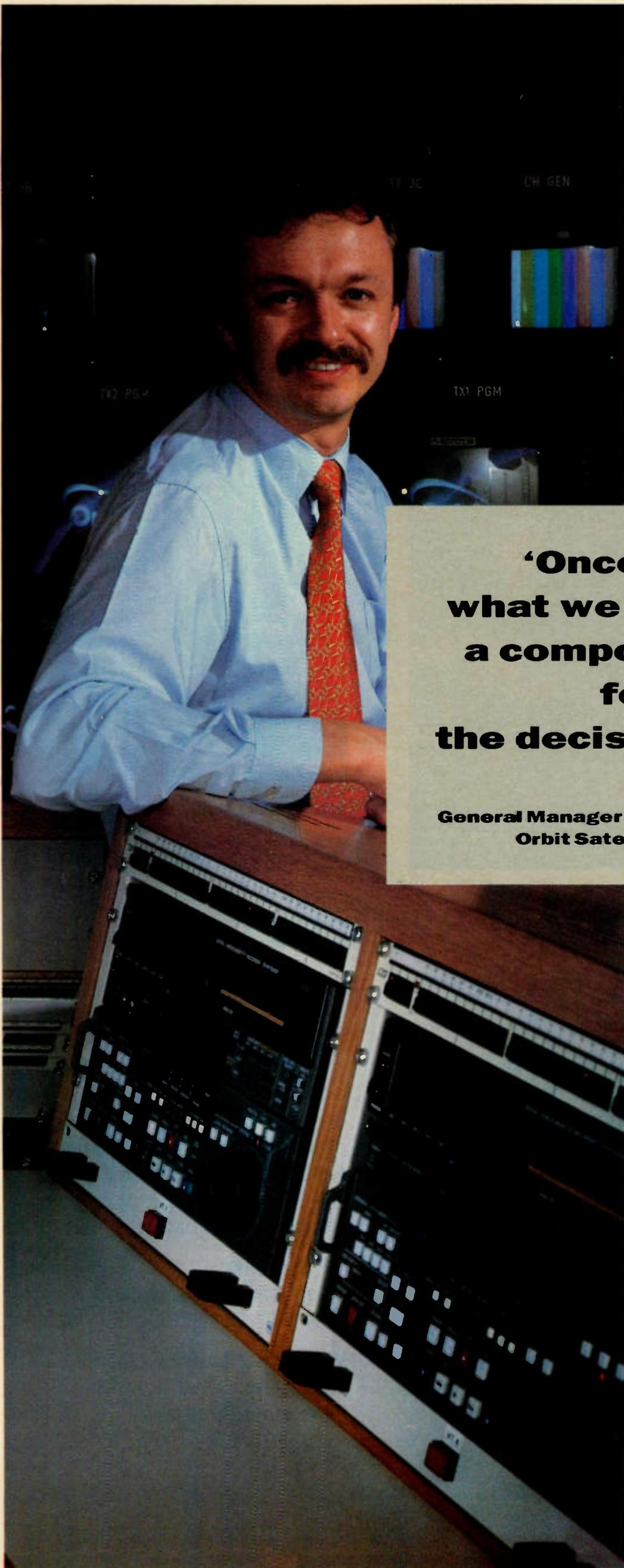
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30 EQUIPMENT



**'Once we saw
what we needed from
a component digital
format,
the decision was easy.'**

**Philip R. Braden,
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Orbit Satellite TV and Radio Network.**

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Digital BETACAM

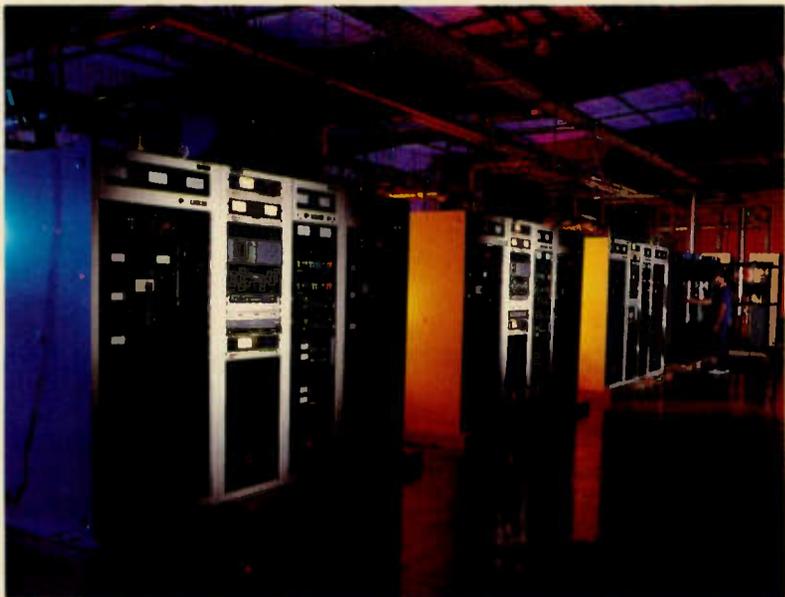
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