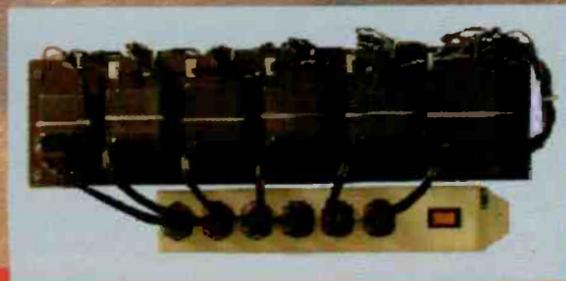
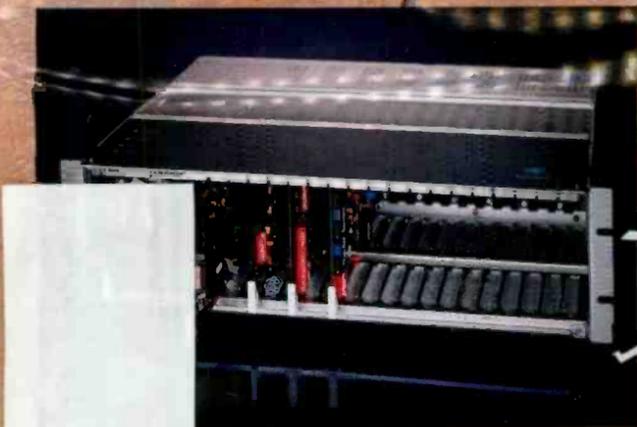
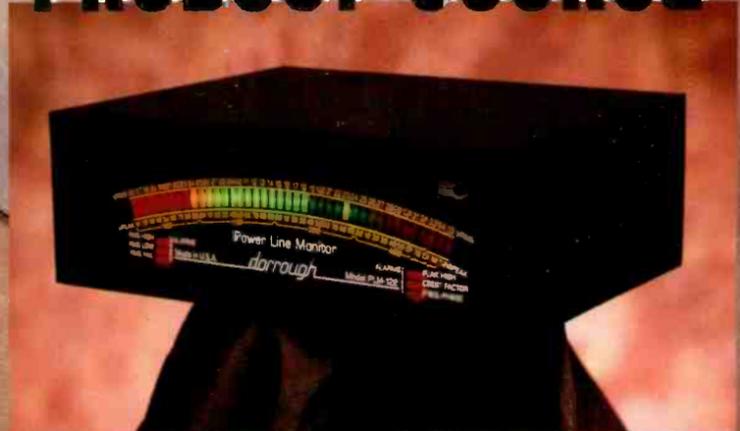
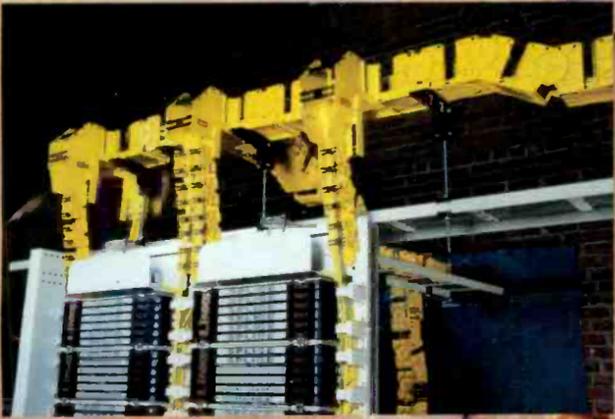


BE Radio[®]

August 1998
A PRIMEDIA Intertec Publication
www.beradio.com

PRODUCT SOURCE





NuStar

The NuStar 3001 Series from Auditronics is, without a doubt, the most highly configurable and modular digital board in the industry. Such innovation in

design allows your studio to grow digitally well into the future without the expense of replacement equipment.

The NuStar is configured with two analog or digital inputs per module. Therefore, you choose what you need now, and it



will still handle your needs tomorrow. Even more, its DSP-based technology is intuitive, reliable, and proven to provide quieter, cleaner sound than any current analog board. And NuStar is amazingly affordable.



2500 Series

Representing the perfect balance between feature rich and value price, the 2500 Series console is the perfect choice for discerning broadcasters on a limited budget.

Whether for new studio construction, rebuilds or replacement, the 2500 Series is an excellent selection for on-air or production applications. Designed to fit any studio need, the 2500 Series matches great design with quality manufacturing and components. And, of course, its modular design allows you to build one your way.



Comet

There are no limits to the performance options in this new, state-of-the-art analog console. With a completely new design and tight engineering, this Analog Mainframe Series is built upon a universal mother-board system that supports many module sets.

Available in 24, 30, or 36 position mainframe, the COMET Series offers superior engineering, components, and technological options to satisfy every engineer's preference and every owner's budget.



Auditronics 210

Designed to take advantage of the latest innovations in technology, the 210 Series of On-Air Broadcast consoles offer exceptional quality and long term reliability at an affordable price. The 210 Series is available in four mainframe sizes, thereby covering any application from a newsroom environment to large multiple station installations. In addition, a large assortment of optional modules gives you the flexibility to configure the console to meet your unique operating requirements without having to resort to expensive custom construction.

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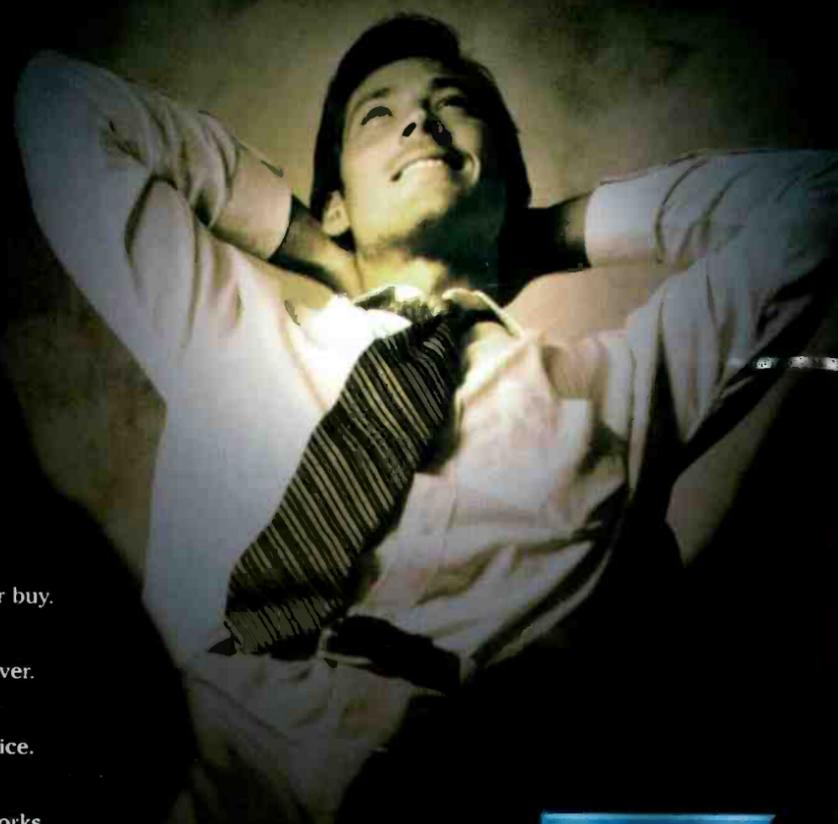
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Digital Audio Delivery systems are now recognized as a must for every broadcast facility. But few systems provide the features, flexibility or reliability required to maintain profitability in this demanding and fault critical application, nor the support mechanism to maintain them.

The ENCO DAD_{PRO32} Digital Audio Delivery System is simply the most powerful On-Air & Production system available. Based on the already widely accepted and mature DAD_{PRO} product, but now optimized for the Windows NT[®] operating system, DAD_{PRO32} is unique in its uncomplicated user interfaces and adaptability to any format, yet harnesses the power and reliability of proven technology.

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- Features full 32-Bit Processing and True Multitasking capabilities. Many third party programs, such as Multitrack Editors, Wire Capture systems and Word Processors may be directly embedded into DAD, or operated on the same Workstation.
- Inherent support of Global Wide Area Networking, for sharing of data between multiple facilities. Ancillary products are available for Store Forward operations and remote management of unmanned downlink sites.
- Operates on commonly available "off-the-shelf" computer hardware and network architecture, utilizing any of a wide variety of redundancy configurations.
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BE RADIO (ISSN 1081-3357) is published monthly except bimonthly in May/June and November/December and mailed free to qualified recipients by PRIMEDIA Intertec, 9800 Metcalf, Overland Park, KS 66212-2216. Non-qualified persons may subscribe at the following rates: USA and Canada, one year, \$30.00; all other countries, one year, \$35.00 (surface mail), \$70.00 (air mail). Single copy price, \$10.00. Periodicals postage paid at Shawnee Mission, KS, and additional mailing offices. Canada Post International Publications Mail (Canadian Distribution) Sales Agreement No. 0956244.

POSTMASTER: Send address changes to BE Radio, P.O. Box 12937, Overland Park, KS 66282-2937.

BE Radio is edited for corporate management, technical management/engineering and operations and station management at radio stations and recording studios. Qualified persons also include consultants, contract engineers and dealer/distributors of radio broadcast equipment.

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FROM THE EDITOR...

Welcome to the third annual BE Radio Product Source. From the microphone to the transmitter, the latest and greatest in radio technology is represented here. Many of these products



were unveiled or previewed at the NAB in April, with some even newer than that. Our cover reprises the NAB98 Pick Hits. Look for the descriptions of these products and also the NAB98 Pick Hit Honorable Mentions inside this issue. For all the in-depth NAB coverage, look at the May/June issue of BE Radio.

Keep this source handy as a reference over the next year as your pictorial guide to what is shaping the trends in technology. The technology we use continues to improve and change every day. When you are faced with your next purchasing decision, be sure to look over the products listed here for a base reference.

To learn more about any product listed in here, use the free information numbers included with each listing. The Product Source is a valuable tool I hope you will use extensively.

I welcome any comments or suggestions for future issues of the Product Source. Contact me via e-mail at beradio@intertec.com, the BE Radio faxback line at (913) 967-1905, or in writing to BE Radio; 9300 Metcalf Ave.; Overland Park, KS 66212-2216.

Chris Scherer
Chris Scherer, editor

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Russ*



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*Demo requests must be submitted as a purchase order.
Terms are available from your Omnia dealer listed below.

See us at AES Show Booth #485
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AKG Acoustics: HSC 200 SR



▲ One of the main features of the HSC 200 SR is the jumper-selectable frequency response of the microphone, which allows the headset to be adjusted to the user's voice. The earphones are semi-open designs and thus will not completely isolate users from their surroundings acoustically. A shock mount for the microphone element prevents the transmission of mechanical noise, particularly cable noise, and leakage from the earphones. The HSC 200 SR is rugged enough to withstand tough handling in the studio and provides a good price/performance ratio.

+43-1 866 54-241;
fax +43-1 866 54-205;
e-mail press@akg-acoustics.com;
www.akg-acoustics.com
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Cortana: Lightning prevention

Cortana Corporation has provided affordable and rugged lightning prevention systems for broadcast towers for 16 years. The Stati-Cat system works through the principle of charge dissipation, providing a continuous, low-resistance discharge path for the static electric charge found on tall structures. The rugged design uses 1/8" stainless steel rods ground to needle sharpness and then inserted into lightweight aluminum bars. The system can be easily installed by any tower maintenance firm. Cortana will also design a complete system application at no charge.

888-325-5336;
fax 505-326-2337
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Innovative Devices: TP33



modern DSP based Digital Hybrid technology. Simple to operate, the TP33 is a component of the Modular Integrated Telephone System (MITS) with solutions for single studios or applications as large as 60 studios.

888-890-7424; fax 250-260-2871; e-mail info@innovadev.com;
www.innovadev.com
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Sine Systems: ACU-1

The ACU-1 is a multi-function audio control unit designed for use in automation systems. It is a micro-processor-based audio switching device with eight stereo audio inputs and one stereo audio output. The unit also has the ability to perform sophisticated gain control operations and deliver the time and temperature. In addition, the ACU-1 has sixteen logic-level status inputs and eight control (relay) outputs. The unit is controlled by an external computer through an RS-232 serial data.

615-228-3500; fax 615-227-2367;
e-mail info@sinesys.com;
www.sinesys.com
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Digigram: LCM440 and LCM220



◀ Digigram's LCM range of professional PCI sound cards offers only the most requested features found in Digigram's signature PCX range, making Digigram innovations available for more cost-sensitive applications. The LCM440 (pictured) offers duplex operation with any combination of up to four active mono I/Os. Balanced analog hardware connections are provided for all I/Os, with provisions for software to dynamically control the card's configuration. The LCM220 is a value-priced, full-duplex card that can mix up to three stereo files to its stereo output. The 220 is available in two versions: one with unbalanced analog I/Os (220a) and a second with balanced analog I/Os (220b).

703-875-9100; fax 703-875-9161; e-mail input@digigram.com;
www.digigram.com
Circle [204] on Free Info Card

OMB America: DDL

The Digital Data Link from OMB appears as a single LAN user port. The wireless link can be directly connected to a 10-base-T hub using an RJ-45 connector. Standard output power is 100mW, with a frequency range of 2.4 to 2.5GHz. The bi-directional system offers a transmit capacity of 10Mb/s.

305-477-0973;
fax 305-477-0611;
www.omb.com
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◀ With the TP33 any studio can have slick talks how and contest operation. Super-fast operation and automatic level control will make the TP33 a good choice for simple multiline studio telephone applications. Using a regular POTS telephone for the handset functions, the desktop box is connected to a remote rackmount unit occupying 1RU of space. The TP33 accepts up to three incoming phone lines and has the capability of taking all three callers to air at once using

Telect: Cable Links



◀ Cable management can sometimes be a tricky problem. Keeping multiple cables in an orderly fashion but still being able to add or modify wiring at any time is challenging, and few things are more frustrating than a rat's nest of wire. These modular units snap together to carry a wide range of cable sizes and run requirements. Links are chained together to form the trough and they move horizontally and vertically to fit any space. The soft bends allow for routing of special handling cable like fiber optic and CAT5, where sharp bends will damage the cable and distort the data being carried. The yellow, fire-retardant plastic links are available in three sizes.

800-551-4567; fax 509-926-1553;
e-mail gettininfo@telect.com;
www.telect.com
Circle [203] on Free Info Card

◀ Digigram's LCM range of professional PCI sound cards offers only the most requested features found in Digigram's signature PCX range, making Digigram innovations available for more cost-sensitive applications. The LCM440 (pictured) offers duplex operation with any combination of up to four active mono I/Os. Balanced analog hardware connections are provided for all I/Os, with provisions for software to dynamically control the card's configuration.

The LCM220 is a value-priced, full-duplex card that can mix up to three stereo files to its stereo output. The 220 is available in two versions: one with unbalanced analog I/Os (220a) and a second with balanced analog I/Os (220b).

703-875-9100; fax 703-875-9161; e-mail input@digigram.com;
www.digigram.com
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360 Systems: Instant Replay 2.0



▲ Instant Replay 2.0 is a self-contained, professional digital audio player and recorder that places an entire audio library at your fingertips. Offering high-quality linear and Dolby AC-2 digital compression technology, Instant Replay 2.0 stores frequently used cuts to 50 panel-mounted buttons for immediate access in 10 user-defined groups. Each cut is stored with a name and ID number, making it easy to retrieve using the unit's "Find" feature. Individual cuts can be organized into playlists and triggered remotely. Audio can be recorded, titled, arranged and played with simple keystrokes and with no cut length limitations.

818-991-0360;
fax 818-991-1360;
e-mail info@360systems.com;
www.360systems.com
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Broadcast Supply Worldwide: 1998 Catalog



▲ As representatives of more than 200 manufacturers, it would be nearly impossible for BSW to give a comprehensive list of all of its products in any one source. As such, this 160-page catalog is a representation of the most popular products from each manufacturer. Orders can be made via telephone, fax, e-mail or Web, and product specifications are available upon request.

800-426-8434;
fax 800-231-7055;
e-mail sales@bswusa.com;
www.bswusa.com
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DPA: Series 4000

Formerly known as Bruel & Kjaer, Series 4000 is now badged by DPA Microphones, though they still employ the Bruel & Kjaer capsules in their design. As DPA had become independently successful in the distribution of high-performance studio mics, B&K's core business remains in the test and measurement of equipment. This divergence has led to the change in badging. All sales channels remain the same, and DPA will continue to service and support the very large number of B&K mics already in the audio community.

+45 48 14 28 28;
fax +45 48 14 27 00;
e-mail info@dpamicrophones.com;
www.danishproaudio.com
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ESE: ES-102



◀ A low-cost and highly accurate GPS master clock and time generator, the ES-102 provides timing signals in SMPTE/EBU, RS-232-C, ASCII, ESE-TC89 and ESE-TC90 formats. The unit also has a six-digit display and provides two one pulse/second outputs. An eight-

channel receiver is capable of receiving as many satellites, although only one is required for operation.

310-322-2136; fax 310-322-8127; e-mail ese@ese-web.com;

www.ese-web.com

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AVcom of Virginia: PSA-65C



◀ The PSA-65C covers frequencies through 1250MHz in one sweep. Frequency converters are available to extend the range of the PSA-65C to 4.2GHz and can be ordered to any 500MHz band between 5.4 and 6.4GHz. The unit features a digital frequency lock function that controls analyzer drift, rechargeable

batteries and microprocessor control. The FM audio demodulator and AM detector with internal speaker, which had been options, are now standard features.

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RCS:

AP NewsDesk

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914-723-8567;

914-723-2258;

e-mail info

@rscsworks.com;

www.rscsworks.com

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Central Tower:

Broadcast towers

Founded in 1985 to engineer and manufacture towers for the broadcast industry, Central Tower expanded its product line to include all telecommunication markets. The company's high production standards use only domestic manufacture, mill-certified steel for tower structural members. Central also maintains a full-time, in-house engineering staff to manufacture every tower to each customer's needs. They offer self-supporting, guyed and monopole tower designs.

800-664-8222;

fax 812-853-6652;

www.centraltower.com

Circle (214) on Free Info Card



SMARTI

SMARTI utilizes MPEG compression and current DSP technology, allowing it to send and receive 7.5 kHz audio over standard telephone lines (POTS) with true broadcast audio quality. SMARTI also incorporates 2 remote control

relays, serial data communications port and an event timer.



SMARTI's functions are menu driven from the "telephone style" keypad, and displayed on an easy to read backlit LCD display.

play. This 'smarter' remote also features three different operating modes: MPEG 2 layer III, low delay G.728, and direct analog telephone interface. Even more, SMARTI uses the fastest modem speed available, and it automatically adjusts speed to match telephone line conditions.

For maximum flexibility, the SMARTI is available in a single input model and a four input model. At a mere 5 lbs., the single input model offers convenience and reliability in one pack-

age that can be battery operated or rack mounted. Or, instead of hauling an extra mixer to the remote, use the built in 4 channel mixer.



ME-40 Exciter

Broadcast Electronics' MARTI brand ME-40 is a quality 40 watt synthesized FM Broadcast Exciter/Transmitter, offered at a surprisingly low price. The ME-40 combines world-class engineering, manufacturing and component quality to make this exciter comparable to the best available.

The ME-40 is an excellent choice either to replace your older existing exciters, or for use as a standby. While it is a high performance FM exciter offering many technical features, its price is well below that of the other high quality American made exciters.



THE CLEAR SOLUTION IN CELLULAR REMOTES

from MARTI® - The Remote Experts

When you can't use your POTS or line of sight technology, you can be "cell casting" with the MARTI cellular remote products.

Cellular remotes give you the flexibility to set up a remote instantly anywhere there is cellular coverage. The Cellcast® has a full 3 watt cellular transceiver for those hard to reach spots. The lightweight Talk★Port™ is portable and ideal for the reporter covering that fast breaking story.

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Cool-Lux: L-10 Smart Power Battery Belt



The L-10 features a 1.2 amp charger with a 3.5 foot, coiled, heavy-duty powercord. The battery assembly is made of the most durable materials in the marketplace and offers the perfect power fill for those medium-sized events with 117WH. It is lightweight (9lbs.), comfortable, and complete with a cigarette or four-pin XLR plug. The L-10 incorporates the Cool-Lux method of voltage-balanced cells, has no memory, and is spaced to allow for recording from a seated position.

805-482-4820; fax 805-482-0736; e-mail coollux@cool-lux.com;
www.cool-lux.com
Circle (215) on Free Info Card

◀ The L-10 features a 1.2 amp charger with a 3.5 foot, coiled, heavy-duty powercord. The battery assembly is made of the most durable materials in the marketplace and offers the perfect power fill for those medium-sized events with 117WH. It is lightweight (9lbs.), comfortable, and complete with a cigarette or four-pin XLR plug. The L-10 incorporates the Cool-Lux method of voltage-balanced cells, has no memory, and is spaced to allow for recording from a seated position.

Continental Electronics: 80201



◀ The 802D1, a next-generation version of the company's popular 802D, features several new enhancements, including more program source options with the addition of the Tkard option from Intraplex, which provides built-in T1 interfacing. In addition, the company has added an ergonomically improved front panel with better color LCD clarity and more intuitive operator control position, and a synchronization feature allowing frequency locking from external 10MHz references such as a GPS receiver. This feature allows synchronizing two or more transmitters on the same carrier frequency.

214-381-7161;
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www.contelec.com
Circle (216) on Free Info Card

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DBMAX

- FIVE BAND DIGITAL BROADCAST MAXIMIZER



Maximize your footprint and get the impact you need with the cleanliness you deserve!

Years of research and experience in digital compression and limiting techniques for CD mastering have led TC Electronic to the development of the five-band DBMAX processor.

The DBMAX was brought to life in close cooperation with chief engineers at broadcast facilities world-wide,

resulting in a powerful broadcasting tool, that easily interfaces with all analog and digital audio broadcast formats.

Used as a Transmission Processor, the DBMAX ensures a louder and more consistent signal, thereby enhancing the signal within the actual coverage area.

Better coverage means you get better ratings, which in turn makes the DBMAX a sound investment!

The DBMAX doubles as a great Production Tool at all resolutions and sample rates, offering optimized program material without the sacrifice of sound quality.

Radio, TV & Film Post Optimizer:

- ◆ Ultimate mastering processing: Louder, crisper, warmer, punchier, more subtle, more spectrally-balanced production
- ◆ 5-band Eq, Dynamic filtering of spot/trouble frequencies, 0 or 90 degree mono summing, MS-decoder etc
- ◆ AES/EBU I/O and sync-input as well as 24 bit AD and DA-converters
- ◆ Full 24 kHz audio bandwidth at 48 kHz sampling frequency

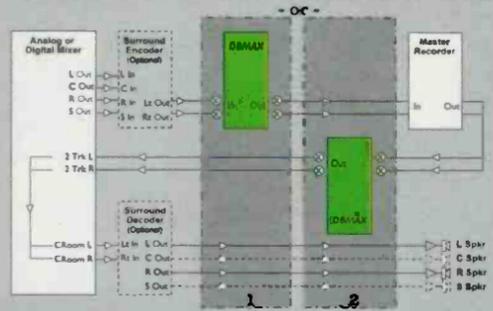
Transmission Processor:

- ◆ Transparent 5-band on-air dynamics processing
- ◆ Presets available for DAB, FM and AM transmission - all pre-programmed and easy to set up
- ◆ Simultaneous AGC, Compressor, Limiter and Soft Clipper
- ◆ Enhanced signal within the broadcast coverage area
- ◆ Various versatile OB-tools (for unattended operation etc)

The DBMAX allows transmission-settings to be copied to the production suites, enabling engineers with a DBMAX to listen to the final transmitted signal during the production phase. For easy transfer and back-up of these transmission settings we've equipped the DBMAX with a PCMCIA-slot.

Finally you can be confident your listeners receive the signal you intended them to!

Put Yourself in the Place of Your Listener



TV or Radio Production & Transmission Emulation

Example of production for DAB, Digital TV and FM

- 1) Production: DBMAX inserted pre-master to optimize production.
- 2) TX Emulation: DBMAX inserted post-master for transmission emulation

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Leitch, Inc.: 64x64 Family Routers

Configured up to 64x64, these routers are serial digital and analog audio capable, allowing users to mix formats and to feed in coax or fiber. The family is modular and features hot-swappable power and logic cards, as well as backward compatibility to all Leitch products. All versions expand from 32x32 to 64x64 in a 4RU frame and to 128x64 in a 6RU frame.

800-231-9673;
fax 757-548-4088;
www.leitch.com
Circle (217) on Free Info Card

OC White/Harris: Audio Metrics mic arm



▲ Now available with a counter balance that will support up to an eight-pound microphone, the Audio Metrics mic arm permits the microphone of your choice to reach out to where the action is. Available with several mounting options, the arm is available in black or beige.

217-222-8200;
fax 217-224-1439;
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Harris DIGIT® CD Digital FM Exciter

- Industry standard - over 1000 units on-the-air.
- True 16-bit CD-quality sound makes your station stand out on the dial.
- Digital input module offers digital stereo generation and a digital composite limiter which can be used to maximize loudness.
- Second generation features include: New benchmark for digital exciter sound quality, synchronous AM noise reduction circuitry and GPS lock option for carrier frequency synchronization.
- Field changeable analog or digital input modules.

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Orban Audicity™ Digital Audio Workstation

- RAM-based editing and mixing.
- Unrivaled speed.
- Built-in effects including compression, EQ, and reverb.
- Video version with advanced SMPTE features.
- Automatic back-up on hard disk or removable Jaz drive.

Circle (97) on Free Info Card



Orban AirTime™ Digital Delivery System

- Multi-user, multi-tasking real-time QNX system.
- Familiar user-friendly interfaces provide a low learning curve.
- Quick and easy installation.
- Get Orban quality, service, and stability from the makers of Optimod.

Circle (98) on Free Info Card

Harris Platinum Series® ZCD Solid State FM Transmitters

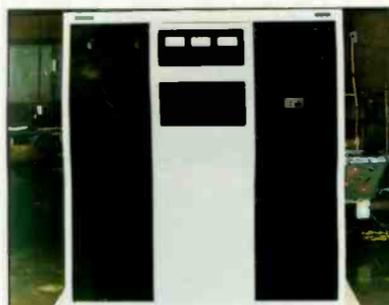
- Digital solid-state FM efficiency and reliability at vacuum tube prices.
- True CD sound with DIGIT® CD Digital FM Exciter.



- World leader in FM transmitter redundancy...even offers built-in second exciter capability.
- Revolutionary Z-Plane combiner offers hot pluggable modules and maximizes RF output power under fault conditions.

- Field proven design with units installed around the world.
- Harris Platinum ZCD Series now available in 2, 3.5, 5, 7.5, 10 and 20 kW models.

Circle (99) on Free Info Card



Harris DX Series Digital Solid State Medium Wave Transmitters

- Module MTBF over 6-million hours.
- Major cost savings...efficiency to 86%.
- Loudest, cleanest digital FM-like sound.
- The global industry standard.

Circle (94) on Free Info Card



Harris DRC2000 Digital Radio Console

- Easy to install and use.
- Six powerful SHARC DSPs.
- Completely user-configurable.
- 5-band parametric EQ per channel.
- 7 digit output busses standard.
- Analog inputs optional.

Circle (95) on Free Info Card



Harris CD LINK™ 950 MHz Uncompressed Digital STL

- Provides uncompressed 950 MHz digital STL.
- Proven - on-the-air nationwide including the top ADIs.
- Avoid "lossy compression" or the possibility of cascading compression algorithms which can distort your station's sound.
- Less expensive than T1, lowest cost bit-for-bit audio transport.
- Provides added fade margin for existing analog STLs.
- Designed to easily replace analog STL systems with digital performance.

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DIGITAL FM TRANSMITTERS
Someday They'll Wonder How We Did It!



Platinum Z Solid-State FM Transmitters.

"Here for future generations"

The Platinum Z may just be the eighth wonder of the world!

Phenomenal CD-quality sound is provided by true digital FM generation. The **Platinum Z** provides the reliability of solid-state digital technology, the performance of digital modulation, and the confidence of third generation solid-state amplifier technology.

Platinum Z transmitters also use innovative Z-plane combining, which enable seamless transmission during maintenance & enhances redundancy. If you remove a hot-pluggable RF module from a **Platinum Z** transmitter at any time, for any reason, the remaining modules will compensate to continue broadcasting at nearly, full power. Incredible RF module MTBF of 250,000 hours further ensures the reliable performance of **Platinum Z**.

Digital CD-quality performance...solid-state reliability & redundancy...with a price comparable to tube type transmitters.



Platinum Z features:

- Digit CD exciter (digital or analog input)
- Hot-pluggable RF modules
- Redundant IPA system
- Redundant power supplies
- Broadband design (N+1 capable)
- Life support backup controller
- Dual output power switching
- Built-in auto exciter switcher
- High/overall efficiency

If your wondering how the **Platinum Z** will fit in your budget or how your listeners and your ratings will increase... Stop wondering and give us a call!



Harris Platinum Z Transmitters®.
Harris does not recommend stacking or leaving the Platinum Z out in the weather.
 * Shown with optional second DIGIT CD™ exciter.

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Circle (36) on Free Info Card

Avocet Instruments: AV-2000



◀ With so many remotes being done using digital transmission, the need for creating a mix-minus return feed is essential for success. Some-

times creating a mix-minus is not easy or practical. The Avocet Instruments AV-2000 uses DSP to remove the local audio from a program feed to create a mix-minus automatically. The AV-2000 will calculate the time differential up to 800ms, and then suppress the returned local audio, typically up to 40dB. Front panel indications for audio and delay correlation let the user see what is happening.

800-443-0728; fax 503-671-9626; www.avocetinst.com

Circle (219) on Free Info Card

Otari: Radar II



◀ The RADAR II HDR series is a multitrack hard-disk recorder capable of 24-bit/48kHz operation. Supplied with a 9GB removable hard drive, the unit provides 42 minutes of 24-track record capacity. Longer record times are available by adding a hard drive internally, or by adding multiple drives on the external SCSI port. Multiple units can be interlocked to provide full 48-track operation via a single RE-8II remote. Optional 48-track metering is also offered. Its sampling rate is variable between 32 and 48kHz. Varispeed, MIDI I/O and RS-422 serial control are also standard, making interfacing with existing studio equipment simple. Other features include 8mm-tape backup, backward compatibility to RADARI, and user-definable macro keys.

650-341-5900;

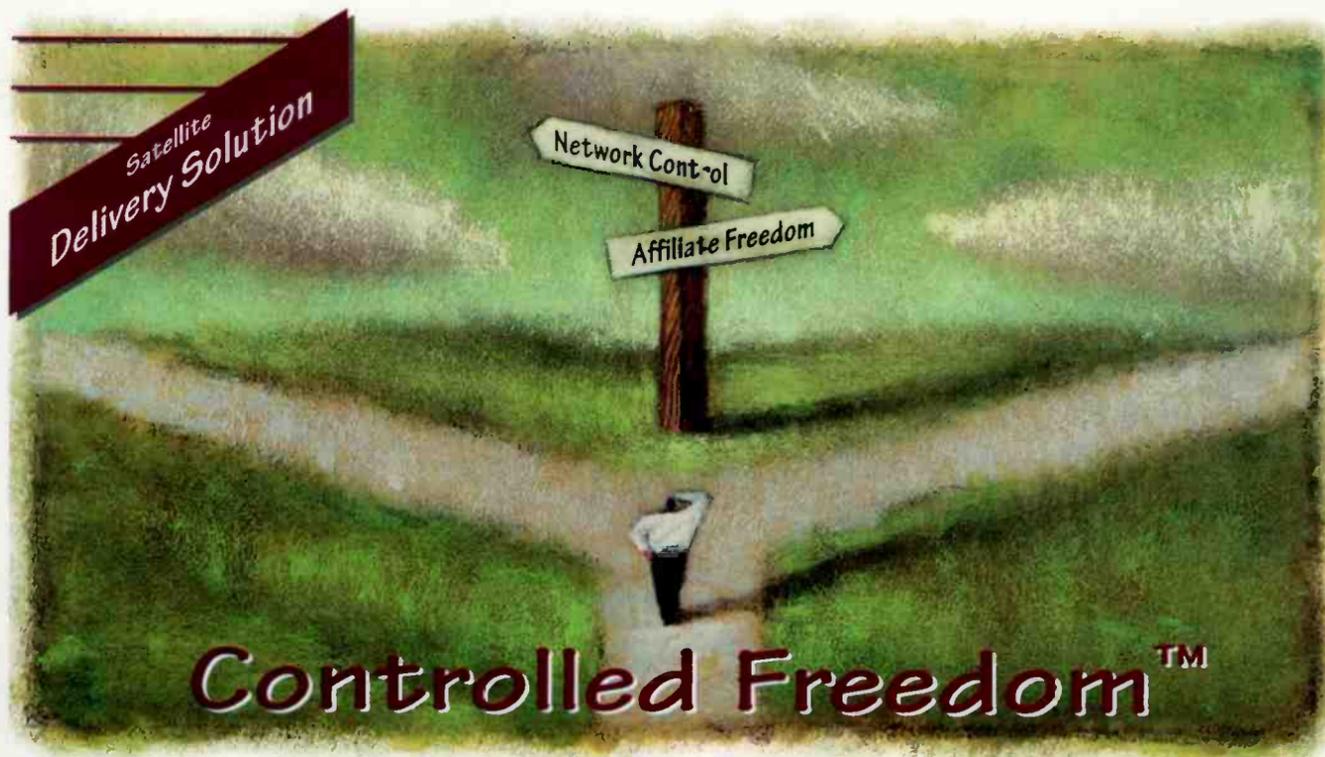
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Network programming is lifeblood to radio. Yet it can also strain the relationship between network and affiliates. One seeks control; the other desires freedom. The two roads diverged.

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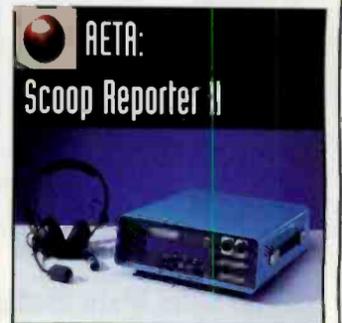
800-598-6270 or 219-294-8143

Fax: 219-294-8120;

Email: spectracast@crownsat.com;

Web: www.crownsat.com

Circle (37) on Free Info Card



AETA: Scoop Reporter II

▲ The Scoop Reporter II is a lightweight, portable audio codec offering two transmission modes – POTS, utilizing the CELP algorithm, and ISDN, with the ITU-T G.722 and MPEG-2 audio Layer II algorithms. Depending on what is being transmitted, the unit is capable of three levels of operational quality. Live speech is facilitated at 7kHz with low delay, live music at 15kHz with proprietary low delay, and CD-quality music at 20kHz. Two packagings are available, a lightweight, portable box and a 19" / 1RU frame.

+33 1 41 36 12 12;

fax +33 1 41 36 12 13;

www.aeta.com

Circle (221) on Free Info Card

Satellite Systems: Repair service

Celebrating its seventh year of service, Satellite Systems offers prompt, accurate pre- and post-service technical support, along with a six-month warranty for the Dart 384 or the Scientific Atlanta 7300/7325.

719-634-6319;

fax 719-635-8151

Circle (222) on Free Info Card

MS1402-VLZ

Pristine mic preamps, natural EQ, beaucoup exclusive features, astonishing headroom, an extra stereo bus... and tens of thousands of enthusiastic owners.

■ "Great mixer. Really cleaned up the sound of my recording and has done a great job live mixing keyboards with the band and as my main mixer on solo and duo gigs." (J.S., Martinez, GA)

■ "Finally, a lightweight/compact mixer loaded with practical features that delivers clean, no-noise sound!" (R.B., Franklin, WI)

■ "Beautiful layout and the smoothest faders I've ever seen in a compact mixer." (B.L., Cedar Hill, TX)

■ "Great product. Clean sound. Live recordings are great!" (D.L., Denton, TX)

■ "I really like the Control Room mixing and Alt 3-4." (R.P., Fort Lee, NJ)

■ "I am greatly impressed with the very low noise of the mic preamps." (T.T., Belair, SA)

■ "I really dig all the features you pack into such a small price. My 1402 was really easy to get into and use." (R.R., Murray, UT)

■ "I didn't believe the hype until I bought an MS1402-VLZ. NOW I believe the hype." (J.C., Toronto, ON)

■ "Sure like that 'stereo solo in place' feature. Also, headroom is great with lotsa presence." (L.S., Forest Grove, OR)

■ "You've heard it all before, I'm sure. Great product. Great price. Options and versatility out the wazoo, from hardware design right down to panel labeling." (J.H., Ithaca, NY)

■ "I really like the EQ points you've chosen and the EQ curves." (B.M., Lanseshore, MA)

■ "Plastic mixers can break easily. The MS1402 is made of metal!" (M.S., Shorewood, IL)

■ "I will be using the MS1402 to track all keyboards on MANDBWDWTTWEL* for Atlantic Records." (R.H., New York, NY)

*Major act, name deleted because we don't want to tangle with entertainment lawyers.

■ **6 mic preamps.** The same high headroom, ultra-low noise (-129.5 dBm E.I.N.) preamps used in our 8-Bus studio consoles.

■ **6 mono and 4 stereo line level inputs.**

■ **2 aux sends per channel.**

■ **Low Cut Filter** lets you use LF EQ without boosting mic thumps, room rumble, and P-pops, or losing audible low bass. Exclusive Mackie circuitry.

■ **Trim** with -10dB "virtual pad" and 60dB total gain range.

■ **EFX to Monitor switch** folds reverb or other effects back into the Aux 1 stage monitor feed. Another Mackie exclusive.

■ "The Alt 3-4/Mute is ingenious!" (B.L., Cedar Hill, TX)

■ "On my test run — a live acoustic show — I was impressed by the quiet and user friendliness of the MS1402-VLZ. The audience was also impressed with its crystal clarity." (F.A., Bloomington, IL)

■ "The 'RUDE' solo light is certainly that, but you never have to worry about leaving it on by mistake." (L.B., Winnipeg, LB)

■ "The Low Cut button is a big help in cutting boomy stuff when running big bass and arch-top guitar live." (G.S., Kirkland, WA)

■ "The quality of the EQ is amazing! I was blown away by the tone and clarity." (J.D., Pomeret, CA)

■ "The MS1402-VLZ is great — excellent specs (I teach audio engineering) and really clever routing options." (J.P., Los Angeles, CA)

■ "What I heard when I hooked up my MS1402-VLZ was exactly what I wanted to hear. Nothing. Cleanest mixer I have ever worked with." (R.S., Fergus Falls, MN)

■ "The 1402 RULES! People all the time come and tell me how wonderful the sound is." (P.F., Cincinnati, OH)

■ "It survived and played through a glass of iced tea spilled all over it at a fashion show for a very important client of mine. Show was perfect. Client paid. I'm buying more Mackie." (H., Houston, TX)

■ "I do work as a Senior Executive Producer for [major classical music label]. The MS1402 was highly recommended by several studio engineers." (S.E., NY, NY)

■ "Great product!" (C.B., San Francisco, CA)



■ **Pre/Post Aux 1 mode switch.**

■ **2 master aux returns.**

■ **Balanced XLR outputs** switch between mic & line levels. Bal/unbal 1/4" TRS outputs, too.

■ **3-band EQ.** Others may have copied our EQ band centers but not the clean, musical sound of our unique circuit design.



■ **Solid steel chassis.**

■ **Constant loudness pan control** for precise stereo mixes.

■ **Alt 3-4.** The MS1402-VLZ's Mute button is really a second stereo bus in disguise. A Mackie exclusive.

■ **60mm faders** with true log taper for accurate fades throughout the controls' travel.

■ **Easy level setting via LED display; in-place stereo solo feature** maximizes headroom & minimizes noise.

■ **Control Room/Phones switching matrix** and separate volume control lets you submix, feed multi-track tape machines, create separate monitor mixes, preview channels, and much more. A Mackie Designs exclusive.

■ **AFL/PFL solo mode switch.**

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Photo: A group of the band folks who work at Mackie Design in Woodinville, WA, 20 miles north of Seattle.

TecNec: On the Level



◀ On the Level audio interfaces are designed to interface semi-pro, industrial, and audio interfaces such as cassette players, CDs, turntables or similar unbalanced equipment to interface with professional balanced 600Ω audio inputs. These interfaces are enclosed in heavy-duty steel boxes, road ready for your next project. The rugged design allows for the day-to-day abuse of installers and contractors.

800-543-0909; fax 914-246-0626; e-mail tec nec@tec nec.com;
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Canare: TS100E



◀ The preparation of coaxial cable can be a cumbersome task. Standard stripping tools often nick or cut into the outer shield. The TS100E has three circular blades that precisely and cleanly prepare the cable. The self-cleaning blades are easily replaced and are provided in a cassette handler. One blade cuts down to the center conductor, another cuts the outer jacket, and the third slits the jacket for easy removal, while a window lets you observe the action in progress. The hardened, surgical-steel blades can perform approximately 1000 operations. Five cable

presets allow fast preparations and the TS100E can accept coaxial cable in a range of sizes up to RG-6 and RG-11.

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EDUCATIONAL CIRCULAR SERIES

Model	Bays	Power	Gain	Price
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MP-2	2	800W	0	\$680
MP-3	3	800W	1.4	\$980
MP-4	4	800W	3.3	\$1,280
MP-2-4	4	2,000W	3.3	\$1,820
MP-3-5	5	3,000W	4.1	\$2,270
MP-3-6	6	3,000W	5.2	\$2,740

LOW POWER CIRCULAR SERIES

Model	Bays	Power	Gain	Price
GP-1	1	2,000W	-3.1	\$350
GP-2	2	4,000W	0	\$1,350
GP-3	3	6,000W	1.5	\$1,900
GP-4	4	6,000W	3.4	\$2,600
GP-5	5	6,000W	4.3	\$3,150
GP-6	6	6,000W	5.5	\$3,700

MEDIUM POWER CIRCULAR SERIES

Model	Bays	Power	Gain	Price
SGP-1	1	4,000W	-3.3	\$690
SGP-2	2	8,000W	0	\$2,690
SGP-3	3	10,000W	1.4	\$3,595
SGP-4	4	10,000W	3.3	\$4,500
SGP-5	5	10,000W	4.1	\$5,300
SGP-6	6	10,000W	5.2	\$6,100

The antenna gain may vary with the frequency. For powers up to 20KW please, make the request to provide the specific configuration.

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Extron: Matrix Switchers



▲ Extron recently introduced the Matrix 6400 and 3200 series switchers for large-scale routing applications that require up to 64 I/Os. Each allows for 16x8 switching upgradable to 32x32 or 64x64 routing applications. With modular internal busing card slots ready to be filled as needed, the Matrix 6400 switchers will grow to accommodate any system – even systems that are still expanding. Using a feature called “rooming,” each switcher can be programmed to function as several small, independent matrix switchers. With 10 presets per room with a total of 100 rooming presets, the units allow superior flexibility and control in routing signals. With a bandwidth of 230MHz (-3dB) fully loaded, the switchers maintain the integrity of any signal.

800-633-9876;
 fax 714-491-1517;
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Meet the “Morning Show Team”



Instant music, instant sound effects, instant fun.

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There is nothing faster, easier, or cooler! You can finally let go of your analog cart machines and associated maintenance headaches. Or, if you’re running automation, now you have the perfect compliment for those times when you need to play something, and you need it now.

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Fast and easy editing for news and listener call-ins.

- Instant record feature captures incoming audio manually, or from popular phone systems and network downlinks.
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Circle (48) on Free Info Card

RadioShack: Weather radio

Weather radio offers built-in support for the Nation Oceanic and Atmospheric Administration's Specific Area Message Encoding (SAME) system that sends alert signal for specific county locations. Unit's programmable memory can be set to receive alerts for up to 15 counties in your area, and features automatic voice mode switching after an alert tone. Additional features include a digital display showing the type of alert being issued, 40-mile range depending on local terrain, an input jack for use with an optional antenna in more remote areas, and a back-up battery system in case of power failure.

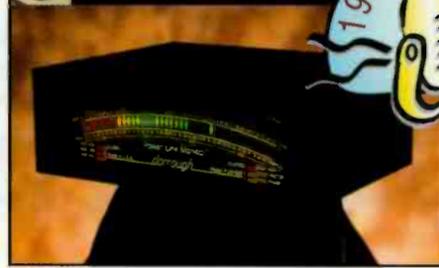


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Dorrough: PLM-120



Stable electrical power is essential in any plant. The Dorrough PLM-120, available in a desktop or rack-mount package, can capture, log and alarm for all violations of the Computer and Business Machine Manufacturer's Association. The AC line voltage is sampled 3840 times per second, capturing transients as short as 5µs. With an RMS voltage range of 96 to 135V, the unit also monitors overvoltage conditions and frequency and phase changes. All records are kept in non-volatile memory, and an RS-232-C port allows for download of all logs. All alarm points are user-selectable. Available in 115 or 220VAC nominal voltage versions, it is also self-calibrating and temperature independent.

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Energy-Onix: Legend Series C

The broadband design of the Legend Series C makes it a perfect choice as a main transmitter or as a back-up for multiple stations in a single market. These medium power, solid state FM units are supplied with frequency-agile exciters, so a frequency change requires only a simple dial-in procedure on the exciter front panel. The hot-pluggable 1000W drawer can be safely removed or inserted while the unit is on-air. The transmitter will continue to operate at reduced power even with a PA drawer removed. Each Motorola MRF151G mosfet used in the transmitter is protected by its own thermal protection circuitry. In addition, each 1kW amplifier is also protected by a VSWR foldback circuit. Units are available in 2000, 3000, 4000 and 5000W models. 10,000 and 20,000W models are also available through special order.

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MediaFORM: CD-5300

◀ A leader in CD replication, MediaFORM has introduced the CD-5300 CD2CD/Plus CD-R replicator. This stand-alone system is capable of producing three CDs simultaneously without the need of a PC. It can also be expanded to a total of seven copy bays with the optional expansion unit. The simple, one-button operation can copy a full 74 minute CD in 18 minutes. It will also interface with a PC to work with CD

mastering software. The Easi-DAT or Easi-Audio option can be added for audio applications. Also available from MediaFORM are the CD-5900 and CD-3707 CD copiers.

610-458-9200; fax 610-458-9554; e-mail info@mediaform.com;

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Crown Satellite: SpectraCast DR2000



64kb/s to 45Mb/s. In operation, the unit permits a radio affiliate to receive multiple network audio feeds from the same receiver and to record and play commercials, liners, PSAs, IDs and even short-format programs.

800-598-6270; fax 219-294-8120; e-mail spectracast@crowntel.com;

www.crownsat.com

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Gorman-Redlich: EAS1

This feature-rich encoder/decoder offers a 25-pin printer port allowing an external printer to keep the EAS log, an auxiliary output through a co-axial BNC fitting to go directly into the FM exciter, and a four-line, 40-character backlit LCD display for rapid interpretation of alert mes-

sages. Alert messages can also be scrolled on a remote sign board, a computer screen or with a character generator on a video monitor. Other features include a 20-key keypad to construct alert messages header code, set modulation levels, or set input levels. The complete required weekly test, the end of the message code, sending a stored alert, or sending a composed header can be done from either the keypad on the unit, or with a remote pushbutton in the on-air control room.

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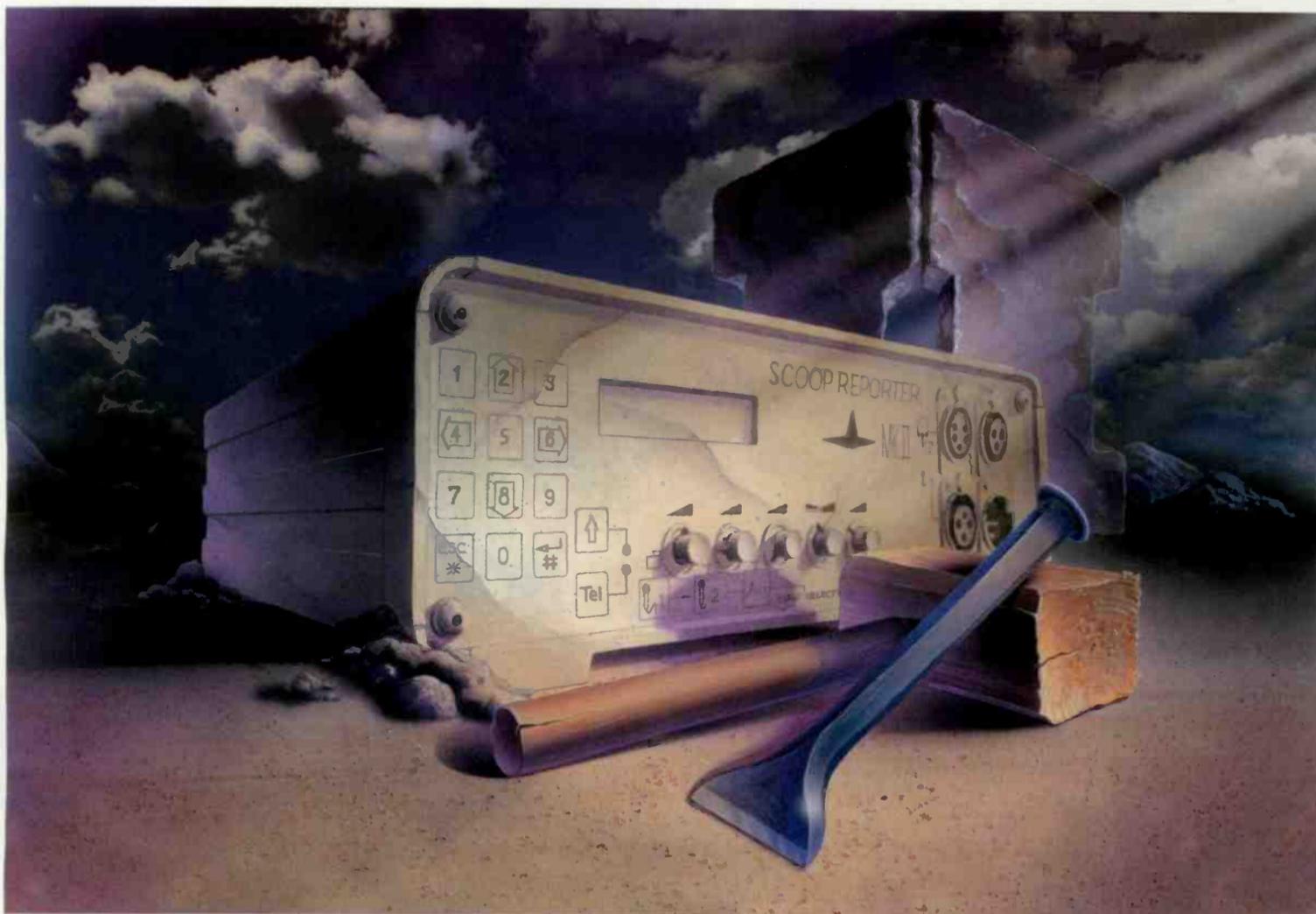
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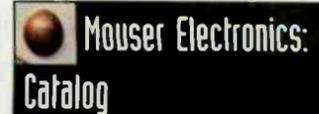
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DIGITAL MUSIC EXPRESS®

DMX SELECTS MEDIATOUCH FOR DIGITAL AUDIO DELIVERY SYSTEMS



MediaTouch

Advanced software technology signifies a new era for DMX and creates one of the world's largest digitized music libraries

Las Vegas, Nevada - April 8, 1998 - DMX Inc., a division of TCI Music Inc., and MediaTouch, a division of OMT Technologies Inc., signed an agreement today for the design and development of custom software solutions for DMX's worldwide network of digital audio file server studios, that will advance DMX's delivery of CD-quality music programming to businesses and homes internationally.

In 1994 DMX became the first company to deliver a digital music service using Dolby AC-3?, and as a result quickly became a digital technology leader. The MediaTouch relationship continues DMX's leadership position by developing new and expanded digital file server studios and software technology for delivering DMX music services. This new digital audio delivery system will provide automated broadcasting beyond the current 95 DMX music formats and hard disk storage management of over 600,000 music titles, creating one of the world's largest libraries of digitized music. The ability to digitally store and catalog music titles provides DMX with increased programming flexibility and expanded capability for program development. In addition, the digital file server studio is the first step in DMX becoming a worldwide point to point distributor of digital audio through the Internet, eliminating the logistics and costs associated with satellite and other distribution methods.

"DMX is extremely pleased to be associated with a progressive software company like MediaTouch," said Lon Troxel, president and CEO of DMX Inc. "This new technology has allowed DMX to develop our digital file server studio, the 'engine' that will drive future digital distribution of DMX in new and unprecedented ways to both the consumer and commercial markets. The digital file server studio is the beginning of a new era for DMX."

MediaTouch was one of the pioneers in developing software for hard disk playback. They were selected by DMX because of their prestigious track record in software development. DMX has been using MediaTouch technology since the fall of 1997 when they began distributing three French Canadian channels to the Canadian marketplace via DMX's direct broadcast satellite (DBS) system. MediaTouch also had the capability to customize their proprietary software specifically for the unique programming requirements of DMX - including providing the title, track and artist information of each song playing through DMX's DJ remote control.

"DMX and MediaTouch have both been the leaders in their field, so this is a natural partnership to create advanced software solutions to further expand the direction of both companies" said Scott Farr, vice president of MediaTouch. "We anticipate this announcement to be the beginning of a long and productive relationship."

DMX's digital audio studios are located in TCI's National Digital Television Center in Littleton, Colorado. Final integration of the MediaTouch software will occur within a month, with complete conversion to the digital file studio server anticipated in May. There will be no interruption of service to current DMX customers.

DMX currently offers more than 95 channels of CD-quality stereo music programming. Each program features 24 hours a day of music in specific styles, including piano, lite classical, modern country, classic rock, jazz vocal blends, hit sweep, mariachi, beach party, '70s hits as well as specialty programs such as Hawaiian, environmental sounds, Christian inspirational and a wide variety of international programming. Each DMX program is continuously updated by DMX's extensive programming

staff to keep the music fresh and current.

DMX Inc., a wholly owned subsidiary of TCI Music Inc., ("TCI Music") (Nasdaq SmallCap Market: TUNE/TUNEP), programs, markets and distributes its premium digital music service, Digital Music Express. The service is available on four continents and is provided to over 2.7 million homes and approximately 50,000 businesses internationally, making it the most widely available music service in the world.

For more information about DMX, access the company's World Wide Web site at www.dmxmusic.com.

Since 1984, MediaTouch has been designing and developing innovative audio solutions for the broadcasting industry. MediaTouch is the audio and Internet software development division of OMT Technologies Inc., a privately held company founded in 1968 and based in Winnipeg, Canada.

MediaTouch's work for DMX underscores the company's creativity and flexibility in delivering solutions for its clients. From a single stand-alone station to a Super Dupoly connected to a Wide Area Audio Network™, MediaTouch provides quality software that helps radio run more efficiently. For more information about MediaTouch, access the company's World Wide Web site at www.omt.net.

MediaTouch
INTRODUCES
OpLOG

On 11:48:53 PM Sunday Feb 1, 1998 This Hour: 11:07 On Hand: 20:18 OpLOG

THE TOUCH LEGAL ID 00:00:00 REAL 23:48:20 RUN: 00:04 07/22	Playing SND9000	MOVE	BEST MUSIC	RETRO LUNCH	RETRO CONTIN	GRANT (KRUST)
SPICE GIRLS (SAY YOU'LL BE TH 00:00:05 REAL 23:48:25 RUN: 03:55 1/7/22	Playing MHD2001	KILL 00:27	THE TOUCH	CLASSI CUT ID	LEGAL ID	HAN SCOR
BOBBY BROWN (MY PEROGATIVE 00:05:51 REAL 23:52:20 RUN: 04:46 2/7/22	Ready MHD0299	AUD 00:00	STARS HALO	LITTLE RAS...L	DAFFY/ DISPCA	FUDD/H WABBIT
RETRO CLASSIC ID 00:08:27 REAL 23:57:06 RUN: 00:05 3/7/22	Ready SND6000	SEE 00:00	SAM/DI LIVIN'	BUGS/D	BUGS/W UP DOC	BUGS/W DOC
MR MISTER (BROKEN WINGS 00:08:37 REAL 23:57:12 RUN: 04:37 4/7/22	Ready MRT2007	AUD 0:00	APU/TH YOU FO	CHEIF WIGAM/	HOMER DOH	KRUSTY CRAP!
XMAS SONG INTRO 00:12:14 REAL 00:01:49 RUN: 00:06 5/7/22	Ready SND7000	AUD 00:00	WILLY/ BUTTER	APU/TW	WILLY/ BUTTER	HOMER/ KEY
PERRY COMO (HOME FOR THE HOL 00:15:24 REAL 00:01:56 RUN: 02:57 6/7/22	Ready MXS1600	SEE 00:00	ABOUT	FLY	QUIT	UP

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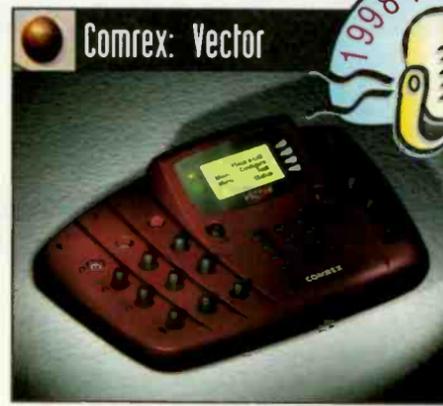
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Orban: Optimod-DAB 6200

Specifically designed for the unique demands of digital audio and webcasting, the DAB 6200 offers Protection Processing, providing peak control without audible compression; Two-Band Processing, which controls dynamic range while maintaining the frequency balance of the original program; and Five-Band Processing, with a flexible set of equalization controls that let a broadcaster create a signature sound. The unit provides peak level control to an accuracy of better than 0.1dB, and an array of filtering choices to prevent aliasing, including filtering as low as 4kHz to accommodate speech-grade services. Other Optimod-DAB 6200 features include digital I/O at 48, 44.1 and 32kHz, a dedicated external digital sync input for house reference signal, analog balanced left and right inputs, an analog monitor output, and a compact 2RU design.

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Comrex: Vector

The Vector, a 1998 BE Radio NAB Pick Hit winner, delivers 15kHz, two-way audio on a standard phone line at a realistic 24kb/s. It's compatible with the popular HotLine codec, but incorporates a higher level coding algorithm that permits wider bandwidth audio at lower data speeds. Even on a 14.4 kb/s connection, the Vector still gives 7kHz audio. The unit contains plenty of mixing and monitoring facilities, including: three mic level inputs on XLR with the third input being switchable to line level; inputs that can be muted with a front panel push switch; three headphone outputs on 1/4" phone jacks, and; outputs that are an adjustable mix of local program and studio return audio. Other Vector features include a quick-dial memory feature allowing one-button dialing, last-number memory and redial at the push of a button, and the ability to answer calls automatically or manually.

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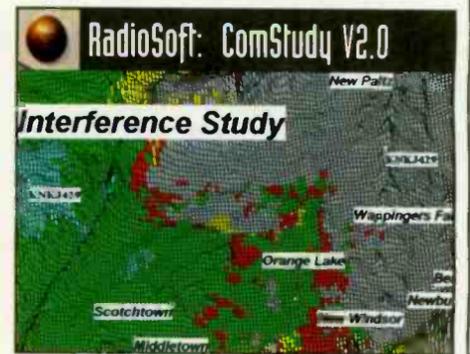
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Sonic Foundry: ACID

ACID is a software program facilitating a powerful multi-track audio editor with loop audio processing functions behind an easy-to-use GUI. Users are able to take audio files from a variety of sources and easily create seamless loops with precisely matched tempo and pitch to produce music for use anywhere a music bed is required. The package ships with hundreds of pre-recorded loops of differing formats, instruments and sounds, including rock, country, hip-hop, alternative, sound-effects, and ambient sounds. 800-57-SONIC; fax 608-256-7300; e-mail sales@sonicfoundry.com; www.sonicfoundry.com
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RadioSoft: ComStudy V2.0

Improvements to this analyzing and mapping software include database management of transmitter lists and matrix studies, full implementation of the new U.S. and international interference methods, and highly optimized 32-bit coding. 888-RADIO95; fax 904-423-0821; e-mail pmoncure@america.com; www.radiosoft.com
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Advanced Furniture Systems: AFS and AFS-E Series

These fully modular systems use stock furniture components and accessories to form an endless variety of studio design options. This allows the tailoring of the furniture to match any space, equipment or storage requirements without the custom furniture price tag. The AFS series has a clean and nearly seamless design with no visible screws or bolts. Standard features include equipment racks and quick release access doors in every cabinet side panel, wood trim to protect all outside edges, a single-level work surface, finished cabinet interiors, and wire/ventilation holes in each cabinet. The AFS-E series is built with the same materials and precision as the AFS series, but with fewer features. These changes allow you to purchase the basic studio furniture while paying for only the features you really need. 970-663-4123; fax 970-663-6338; e-mail afs@mail.omn.com; www.omn.com/afs
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Henry Engineering: Portamatch



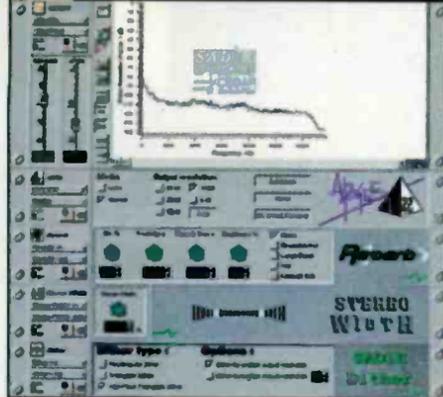
▲ This battery-operated version of Henry's Matchbox level and impedance interface operates on two 9V batteries and converts unbalanced -10dBv audio to +4dBm 600Ω balanced lines. Four independent amplifiers provide bi-directional stereo interface to convert unbalanced I/Os to balanced lines.

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SADiE, Inc.: V3 Software



erates an entire PQ list based on the in and out points of entries in the CD Playlist. Other new features include: automatic generation of ISRC numbers; longer track names; snap index to current time; and a completely comprehensive countdown preview function, allowing the user to monitor up to, through, or after any of the PQ flags, either singularly or for the entire CD.

615-327-1140; fax 615-327-1699; www.sadie.com

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◀ SADiE recently introduced major new enhancements for its PQ editor that are included in the latest V3 software upgrades for SADiE and Octavia digital workstations. Most noticeable is the new look of the editor, which has a completely interactive text editor attached to the CD Playlist. The user can now create a PQ list by either scrubbing the playlist to the correct position and manually inserting each flag, or by using the auto-create PQ list function which automatically gener-

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Kintronic Labs: Optilink

Optilink is a digital, fiber optic, intelligent control system for use in AM directional antenna sites. The system, combined with the Kintronic Model DAC-MOD-2-12 software programmable controller offers state-of-the-art local or remote operation of a site via microwave or satellite link. Features include RISC Processors, interpreted BASIC compiler, support for fiber optics up to 2km in length, and capability for up to three autonomous RF contactors at each tower.

423-878-3141;

fax 423-878-4224;

e-mail ktl@kintronic.com;

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Vega: EMP wireless mics

Incorporating the considerable advantages of advanced microprocessor technology, the new Vega EMP Series of UHF wireless microphone systems offers an unprecedented level of RF and audio performance. The first system in the EMP series included the R-672 frequency receiver, as well as the T-690 handheld transmitter and T-772 bodypack transmitter. These system elements combine to offer a full wireless toolbox to RF and audio professionals.

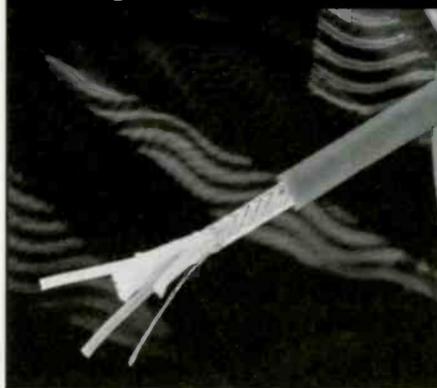
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Belden Wire & Cable: 1800F High-Flex Brilliance



◀ The new 1800F High-Flex AES/EBU Digital Audio Interconnect Cable is a high-performance, 110Ω, shielded, single twisted-pair cable that can be used in a number of different ways, including as a highly flexible digital audio patch cable, an ultra-high performance analog audio mic cable, or as an interconnect cable for state-of-the-art digital audio mics. No-compromise analog audio performance is assured through the use of Belden's patented French Braid Shield. This is a double spiral shield (tinned copper double serve) in which two spirals are tied together via one weave. The result is 95% shield coverage, but with lower levels of microphonic and triboelectric noise than either spiral or conventional braid shields. The 1800F features one pair of 24AWG stranded, bare copper conductors with blue and white high-velocity Datalene insulation, and a drain wire.

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Broadcast Electronics: AudioPoint



◀ The Broadcast Electronics AudioPoint is more than just another routing switcher. This next generation device uses DSP to eliminate cabling, wiring and relay panels. Instead of employing a crosspoint matrix, all incoming signals, once digitized, are treated as data and not audio. The AudioPoint can accept audio sources that are analog, digital, synchronous, asynchronous or MADI (multi-channel audio digital interface). In addition to simple routing, the AudioPoint can also perform programmable audio delays and gain and EQ adjustments. The system can be controlled via a graphic user interface that can be used across a network and can support drag-and-drop programming. Remote panels are also available in 32, 64 and 128-button X/Y controllers.

217-224-9600; fax 217-224-9625; e-mail bdcast@bdcast.com;

www.bdcast.com

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Cartworks/OBM Systems: CartWorks features



◀ The CartWorks system benefits from several new features, including its VIO (Visually Impaired Operator), Music-on-Hard Drive (MHD), and additional audio format options. VIO is a speech driven interface that does not affect the normal visual operation of the system in any way, allowing sighted and blind operators to share a single system. The VIO option also includes a Braille keyboard. The MHD option allows the recording of voice tracks to coincide with time of day events for live sound simulation, switch between live assist and automated modes at the touch of a single button, and the importation of logs from most any music and traffic scheduling software. And lastly, CartWorks announces support for MPEG and linear digital audio formats.

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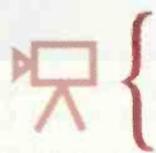
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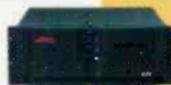
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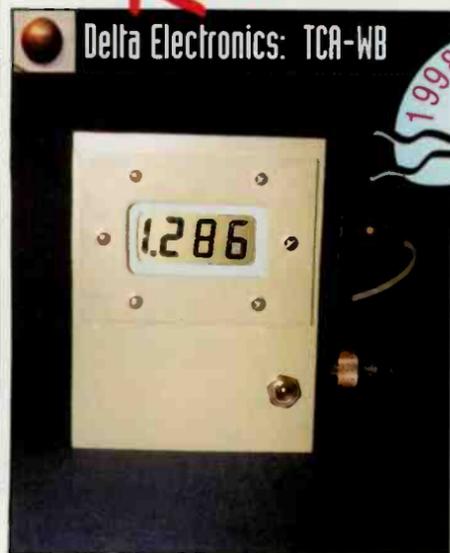
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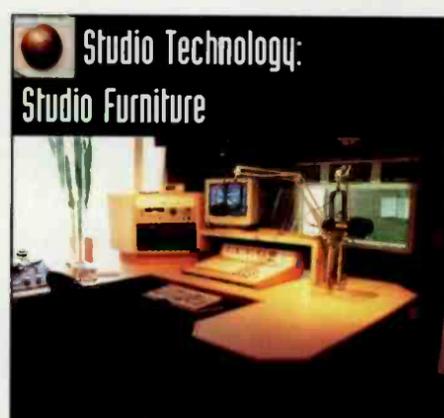


Delta Electronics: TCA-WB

800-833-5828; fax 703-354-0216; e-mail sales@deltaelectronics.com;
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◀ The TCA-WB is designed to operate over a broad current range so that it can accommodate a variety of applications and have suitable application in an installation with greatly varying power levels between modes of operation (day, night and critical hours). The wide frequency range covers the 20kHz to 5MHz range. The three-and-a-half digit LCD display shows an accuracy of better than two percent with a 2.15VDC full-scale output. The range selection is automatic. Power requirements are 18 to 40VDC at 80mA.

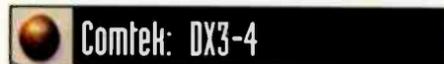


Studio Technology:
Studio Furniture

e-mail sales@studiotek.com; www.studiotek.com
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◀ Studio Technology is a full-service company that caters specifically to the broadcast and recording industry. Aside from producing some of the finest custom studio furniture in the country, Studio Technology offers furniture design assistance as well as delivery and installation of the furniture it produces. The company is currently celebrating its seventh year in business.

847-676-9177; fax 847-982-0747;



Comtek: DX3-4

The DX3-4 digital IFB controller is an advanced, multi-task digital matrix router designed to meet the standards of mobile IFB and broadcast intercommunications. The unit features easy-to-learn controls with matrix routing connections to four universal inputs, three outputs, and two I/O ports which can be used for direct interface from a cell phone, telco line, or standard two- or three-wire intercom systems. All functions are constantly monitored with a large backlit LCD display. All input levels are keypad adjustable and displayed in 1dB increments. Functions programmed as IFB have a voice-activated fader with keypad adjustable VOX gain. Manual controls allow the operator to interface or to interrupt telephones, intercom, and both wireless talent channels from the gooseneck microphone. Front panel loudspeakers, headset or remote speaker can be used for monitoring.

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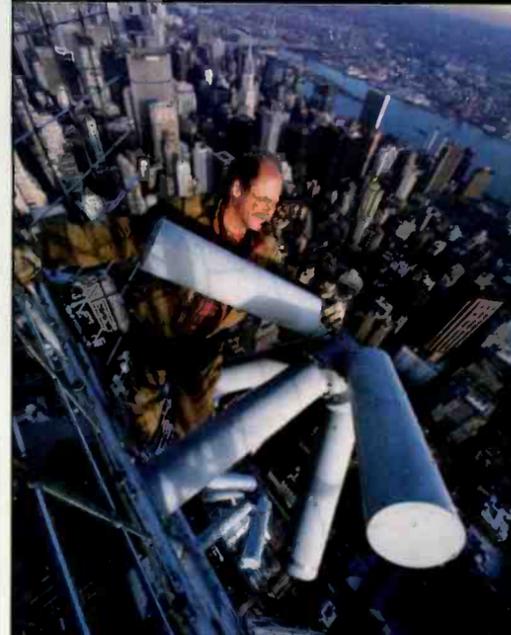
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Broadcast Technology: Ultramod FM

◀ The Ultramod FM audio processor, well known as clean and easy-to-use, has now been improved with new, state-of-the-art circuits that include a low-distortion clipper and an ultra-clean digital stereo generator. The new Ultramod processor can be used as a stand-alone or can be purchased as part of the Ultramod FM-3 or FM-4 audio processing packages. The FM-3 includes two, three-band Tri-Maze processors as well as the Ultramod processor. For aggressive, yet clean processing the FM-4 adds a composite processor to the FM-3 package.

719-336-3902; e-mail info@hnat.com; www.hnat.com

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Intraplex/Glenayre: STL Plus



◀ Intraplex is already established as an innovator in transmission of signals over T1 circuits. Replacing multiple analog telco loops and offering multiple digital channels for audio, data, LAN, telephone/fax and control signals is the core of the STL Plus system. Add to this the cost savings of an

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Intraplex 978-692-9000; fax 978-692-2200; e-mail sales@intraplex.com; www.intraplex.com

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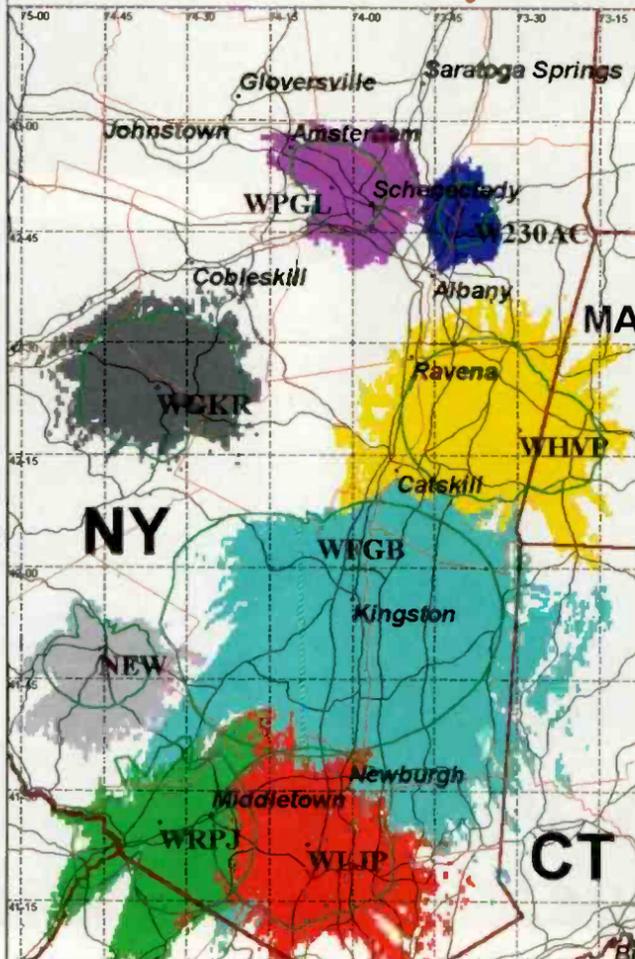
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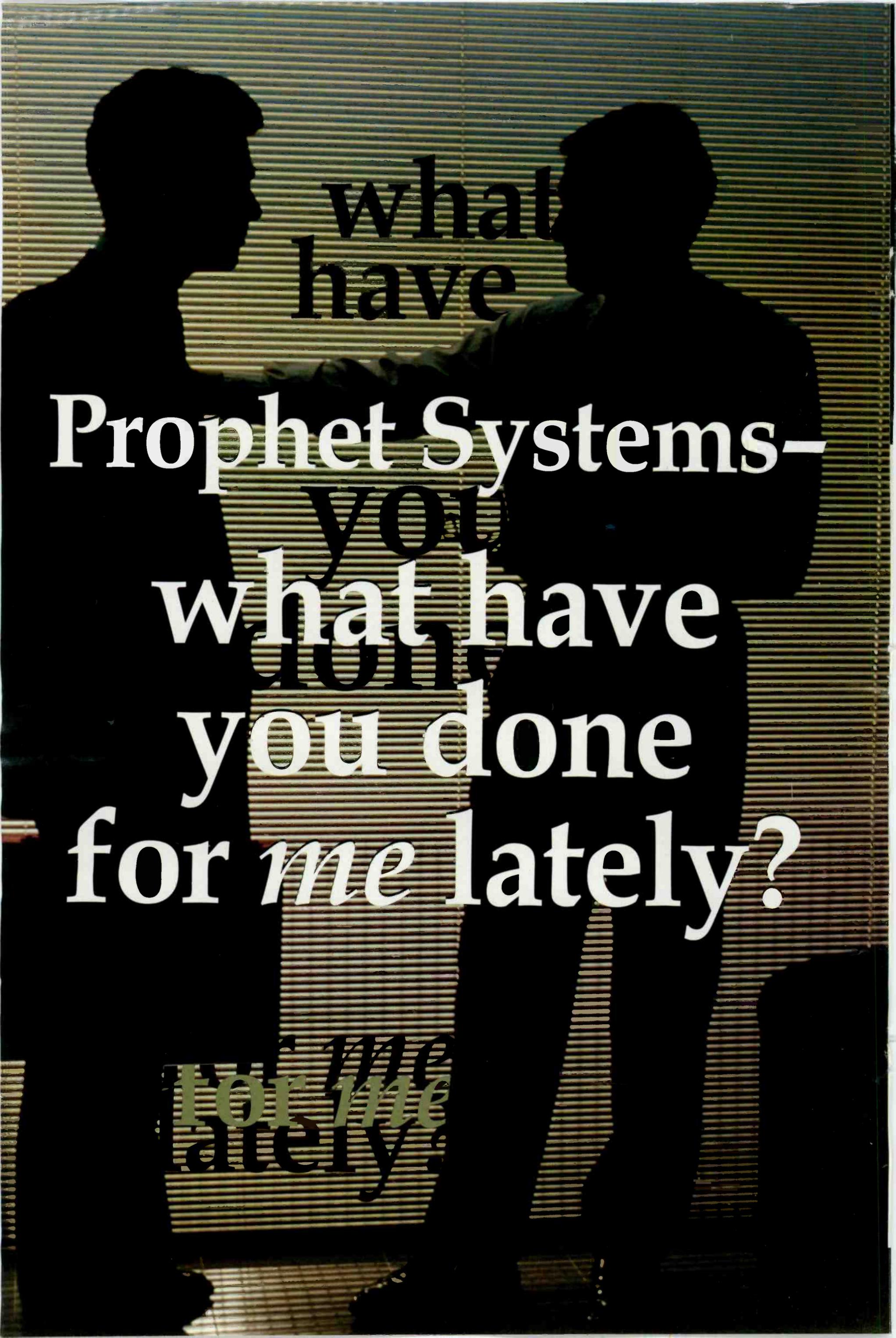
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The image features two men in silhouette, facing each other as if in conversation. They are positioned in front of a window with horizontal blinds, which creates a pattern of light and shadow across the scene. The overall mood is contemplative and professional.

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Wheatstone: D-500

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TC Electronic: Gold Channel



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Coaxial Dynamics: RF terminations

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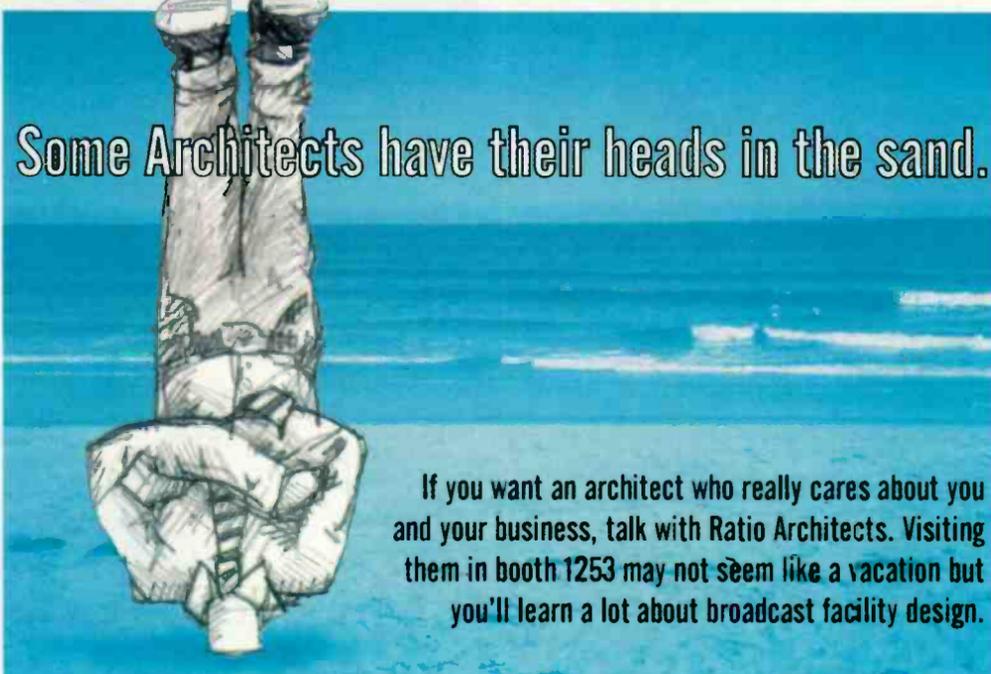
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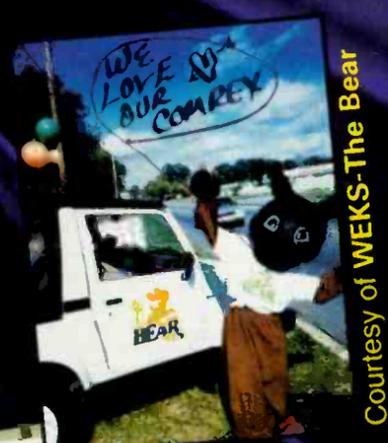
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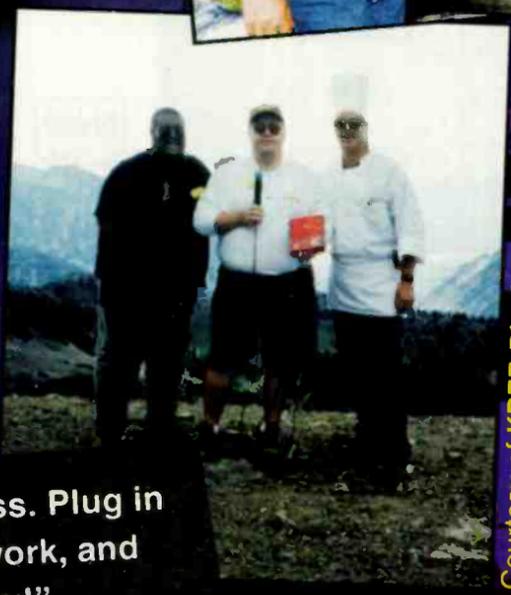
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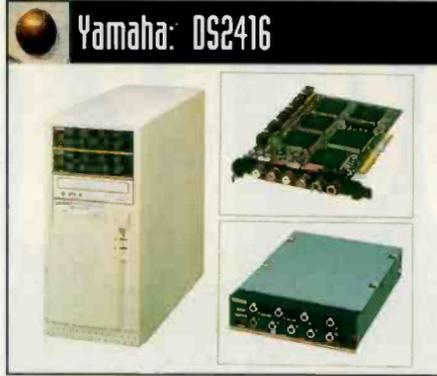
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RAVE is a system that enables audio and control data routing via standard Fast Ethernet hardware and cabling, thus reducing cable costs, simplifying installation, increasing routing flexibility and improving audio performance. Individual units are capable of handling up to 16 channels of audio I/O. Using a front panel switch on each RAVE unit, blocks of eight audio channels can be transmitted or accessed at any point on the network. Sixty-four channels of audio can be operating on a dedicated audio network at one time with less than 6.3 milliseconds of delay to any point on the network. Inputs can be analog or digital.

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When installed inside a PC, the DS2416 digital mixing card offers the mixing power of the Yamaha 02R digital mixer, including: a 24-channel, 32-bit digital mixer with 10 bus outputs and six aux sends; 104 bands of parametric EQ; 26 dynamics processors; two effects processors equal in quality to Yamaha's REV500; channel delay on 20 channels; comprehensive metering; digital cross-patching for channel I/Os; a two-channel 20-bit A/D and D/A converter; stereo digital I/O with 20/24-bit resolution; and multi-channel analog and digital I/O with optional interface hardware. In addition, the card offers 16 tracks of hard disk recording with up to 32-bit resolution. Two DS2416 cards can be linked to create a larger system. Additionally, the card includes an audio streaming engine that provides eight tracks of simultaneous recording to, and 16 tracks playback from the disk drive.

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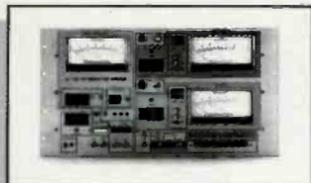
Roscom, Inc.: Broadcast equipment specialists

Roscom has three offices specializing in complete RF and studio equipment packages, design and installation. The company also provides complete digital automation packages and carries over 150 lines of broadcast equipment.

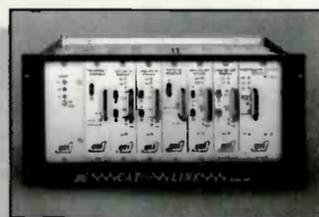
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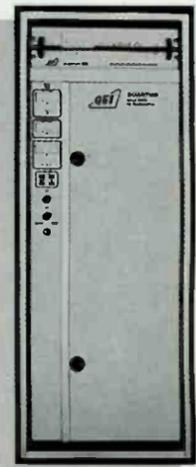


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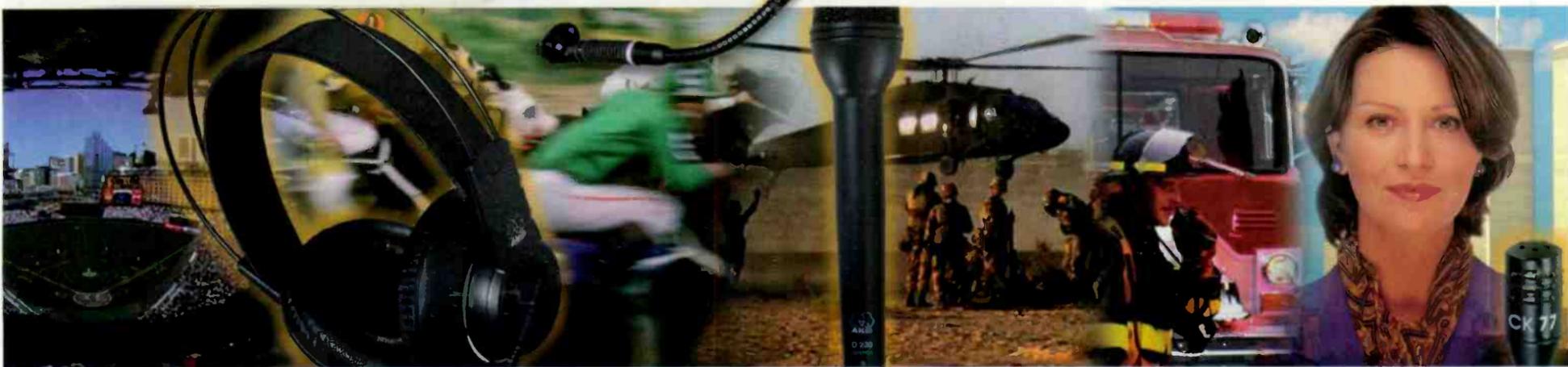
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H A Harman International Company

Ward-Beck: Audio Bit Spitter



◀ The Audio Bit Spitter (ABS-1) is a companion to the successful Audio Bit Buddy portable digital/analog audio monitor. This portable, battery-powered unit generates digital and stereo analog audio test signals that may be injected into the signal path when testing device performance or signal path continuity with an Audio Bit Buddy or other audio monitor or metering device. The ABS-1 generates an AES/EBU digital signal of 1kHz or 400Hz at the three most commonly used sampling rates of 48, 44.1, or 32kHz. The unit may also be synchronized to an external digital reference signal. Digital signal levels of -20, -12 and 0dBFS are front panel selectable. Stereo analog tones of 1kHz or 400Hz may also be selected at levels of -16, -8, and +4dBu.

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Marshall & Associates: PA6471-14



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◀ This newest addition to the family of solid state microwave power amplifiers replaces obsolescent T.W.T.s in Harris Farinon's DM6 microwave radio. The PA6471-14 is a form, fit and function replacement that extends the operating life of existing equipment. The amplifier, is easy to install and requires no maintenance.

Neumann: TLM 103

▶ The TLM 103 microphone offers a flat-frequency response to just below 5kHz and a 4dB presence boost between 6kHz and 16kHz. The fourth-generation circuitry of the 103 allows only a 7dB (A) self-noise figure. The maximum sound pressure level capability is 138dB PS (at 0.5 percent distortion) with a resulting dynamic range of 131dB. Components of the 103 are elastically mounted to reduce use and handling noises. The mic operates on phantom power.



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Nagra: ARES-C, C-PP

The ARES-C is a unique digital recorder offering operation versatility and shock-resistant, continuous, solid state recording capability matched by powerful on-board editing and transmission (ISDN and analog) features. The codec module allows program material to be digitally transmitted downline to the broadcast studio, as well as enabling live, two-way communication via ISDN. Editing is non-destructive, instant random-access, and the double PCMCIA slot allows edited recordings to be copied and stored, or distributed separately from the master recording. The unit has a maximum recording capacity of over four hours via two 64MB PCMCIA type II cards and offers sampling rates of 16, 24, 32, and 48kHz.

Based on the ARES-C, the C-PP is a standard 19" rack-mount powered from 94V to 264V ac, 48 to 63Hz. In addition to the standard codec facilities, it also offers the possibility of recording and playing, as well as of virtual editing, based on a PCMCIA flash memory card technology.

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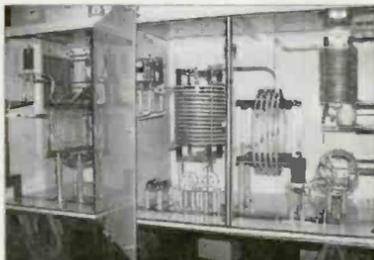
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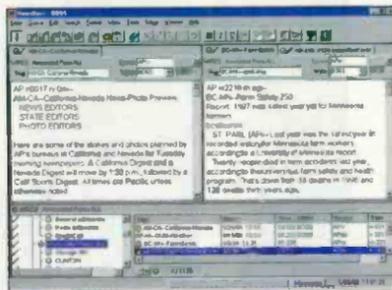


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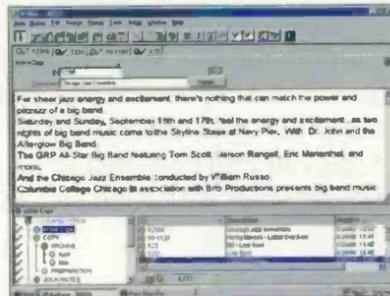


The NewsBoss newsroom management system for Windows, was designed specifically to improve your news operation. NewsBoss offers integrated wire capture, story composition

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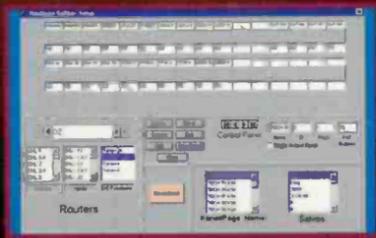
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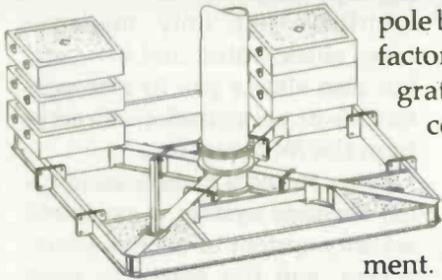
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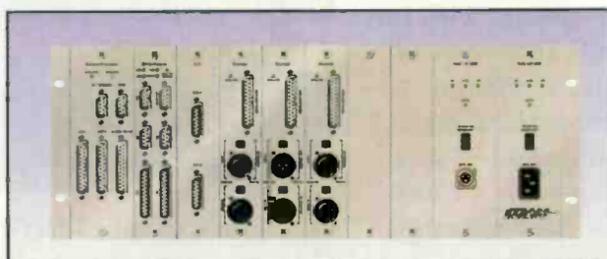
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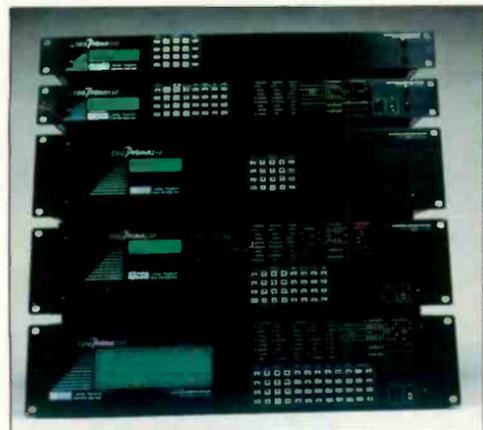
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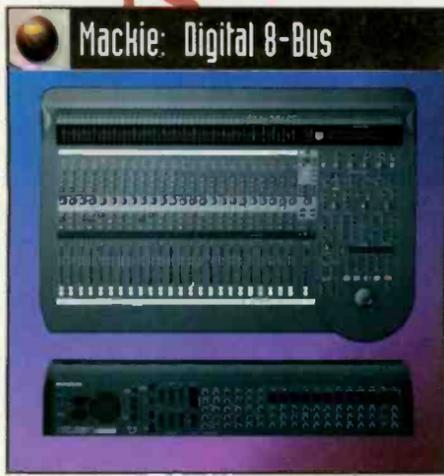
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A combination system readout and datalogger, the HI-4460 makes use of its large backlit LCD to display multiple numeric and graphical electromagnetic field representations. The display can show the resultant reading, individual axis readings, and bar graphs, as well as a running time plot simultaneously. It incorporates an easy-to-use menu system for quick setup and execution of EMF data gathering sessions, allowing either simple test configurations or complex site evaluations to be handled easily. The unit features an RS232 PC interface for downloading software sets, as well as uploading the test data to a computer. A partial list of the additional features includes simultaneous axis, resultant and peak field display, running time plots of field strength figures, and the ability to review collected data in numeric and graphical formats.

612-934-4920; fax 612-934-3604;

holaday@holadayinc.com;

www.holadayinc.com

Circle (273) on Free Info Card

Honest AM Improvement



The 235 is a no-nonsense, full-function AM audio processor. It features slow, "gain-riding" AGC, 3-band average level compression coupled with variable equalization, and an asymmetrical peak controller combining fast limiting with variable clipping depth. Strict NRSC compliance is guaranteed by specified pre-emphasis and overshoot-compensated low-pass filtering.

You'll find the 235 very easy to set up and use. Front-panel controls and indicators make local operation a snap, and the built-in RS-232 port and our simplified software enable computer or modem remote control if desired.

Your preferred broadcast equipment supplier can arrange a demo at your station. Phone, fax or check our website for complete technical details.

Model 235 — \$1800

Inovonics

1305 Fair Ave. • Santa Cruz, CA 95060
TEL: (408) 458-0552 • FAX: (408) 458-0554

www.inovon.com



Circle (64) on Free Info Card

NUMIX

Logitek's Numix is an innovative approach to digital console design. The control surface is a series of wedge-shaped, modules that can be arranged at will to match the needs of the installation. The control surface arcs around a user to make even distant faders and buttons accessible. You can choose from 4, 8, 12, 16, 20 or 24 faders - motorized or non. Each fader is assignable through a matrix of buttons. Options include pan, EQ and profanity delay. Presets allow each user to have a preferred configuration. The control surface's low profile ensures that studio PC monitors will not create a wall between talent and host and the narrow depth means easy access to touch screens. If you think of a



routing switcher with a sophisticated control head, you will be closer to the concept of the Logitek digital consoles than thinking of a traditional analog console. The audio is kept separate from the control surface in a rack mount enclosure that can be up to 1000 feet away. This "Audio Engine" houses all the audio cards (either analog or digital), it supports multiple control surfaces, meaning to add a second studio, you add a second control surface... not a second console. Inputs can be exclusive or shared among studios (such as network feeds). Logitek has taken advantage of the digital technology to build a console that is in tune with the new reality of radio.

For more information on Logitek's full line of digital consoles for radio, call Richard Byrne at 1-800-231-5870.

Circle (107) on Free Info Card

Buying an analog console? DON'T!

That analog console may at first look cheap and affordable but given that consoles usually last over 10 years you might want to think again. Will you want that analog piece of gear in your facility in the year 2008... or even 2005? Analog consoles bought today will not get the years of use that digital ones will, meaning that the cost per year of use will be higher for analog consoles than newer... even more expensive digital ones. Factor in the cost of installation, the disruption of construction and you have strong arguments from your accountant, to invest in digital consoles today.

The costs savings can be very real... by removing heat generating equipment from the studio, your air conditioning costs can be reduced and over the life of a console - this could mean thousands of dollars. Logitek allows you to do this with it's separate audio engine. The "heart" of the console can be remoted up to 1000 feet, kept next to the satellite feeds and hard disk systems. This also means that cabling that had to be run back to the engineering room no longer needs to be... another real cost saving in labor and cable.

Having the "Audio Engine" outside the studio means that servicing can be done during normal office hours thus reducing overtime... there is no longer a need to come late at night or weekends to work on the console.

With the modular approach that Logitek has taken, you have a protected investment. Need more inputs... in the traditional analog world this could mean a whole new console, with Logitek's Audio Engine, you simply add more cards to the audio engine. And, as we move to a totally digital studio, adding a digital microphone will simply mean replacing a card, rather than a console. Logitek's consoles are software defined as opposed to having fixed hardware modules for different functions. If your station suddenly changes from music to talk, there is no need to order and wait for new modules to come in. With Logitek you can redefine your consoles with a push of a button. You can change inputs from mono to stereo, add mix-minus busses, even add processing. Logitek consoles will meet your needs today and in the years to come.

For an information package on Logitek's digital consoles call Logitek now at 1-800-231-5870.

Circle (108) on Free Info Card

The **Digital** Console that Fits

Logitek designed and built the ROC-5 digital console to meet your needs for a small size console. Ideal for dubbing studios, newsrooms or stations that use automation or satellite programming.

Logitek's ROC-5 is small in size but offers up to 64 inputs - all easily accessible through assignable faders. The ROC-5 works with all analog and digital audio sources. It has a serial interface to your hard disk system, adding functionality and value to both systems.

Logitek offers the widest selection of broadcast digital consoles. Call us today for a complete information package..



ROC-5 starting at under \$8,000

Logitek digital with a better difference!

3320 Bering Drive, Houston, TX, 77057 USA Voice: North America 800.231.5870
 Fax: 713.782.7597 Others 713.782.4592 e-mail: info@logitekaudio.com

Visit our home page at www.logitekaudio.com for more information

Circle (67) on Free Info Card

S.W.R. Inc.: FM Antennas



▲ Headquartered in the US, S.W.R. products are manufactured and tested on site to ensure reliability. Through superior design procedures and high testing standards, the company continues to develop new technology, upgrade manufacturing procedures, and design superior features into its products. In addition, SWR will supervise RF installations, perform field service work, and customize products to meet individual needs. The FM3 (pictured) is built along the lines of the company's FM10, but is priced for the Class A station.

800-762-7743; fax 814-472-5552;
e-mail swr@third-wave.com;
www.swr-rf.com

Circle (274) on Free Info Card

Multidyne: AIA-880

Adapt the audio screw terminals of the Leitch FR-883 and FR-884 audio distribution trays to XLR connectors using this breakout panel. The interface is neatly accomplished using ribbon cables to adapt the screw terminals to two panels housing 60 XLR connectors each. The system converts all 120 screw terminal connectors to 120 XLR connectors in four rack units. All the audio connections are made with XLR terminated cables instead of direct wiring to screw terminals.

800-488-8378; fax 516-671-3362;
e-mail info@multidyne.com;
www.multidyne.com

Circle (275) on Free Info Card

Systembase: C400xr

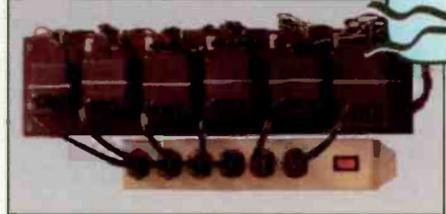


◀ The C400xr is a fully featured, 1RU, 19" rack mount stereo ISDN audio codec offering a short coding delay of only 3.8ms. In addition the unit can interface directly with the ISDN digital network to provide a high-quality, bi-directional music circuit at either 15.6kHz stereo or 22.5kHz mono. Connection to various other types of digital networks is permitted: included x.21/v.35 digital leased lines (nx64kb/s), satellite, digital microwave and spread spectrum links. The unit is ideally suited for implementing STLs for FM radio with full-bandwidth ISDN backup in case of a primary circuit failure. AES/EBU digital audio interface with sample rate conversion is supplied as a standard, allowing direct connection to digital studio equipment. Other features include Dial-on-Audio/ Hang-on-Silence mode to minimize ISDN call charges, 9600kb/s auxiliary data port for sending time code, and full remote management facility.

+44 (0) 1256 882 797; fax +44 (0) 1256 882 797;
e-mail sales@systembase.com;
www.systembase.com

Circle (277) on Free Info Card

Radio Design Labs: WH1



strip. The WH1 from Radio Design Labs mounts them on a single bracket where they can be spaced and secured as needed. An included six-inch power cord connects the supply to the power strip, thereby eliminating the wasted space. Each kit comes with the parts needed to mount up to six power supplies. The brackets measure 19" x 4.6" x 1.1".

800-281-2683; fax 800-289-7338; www.rdlnet.com

Circle (276) on Free Info Card

◀ With more and more equipment using external, wall-mount power supplies, the space needed to plug in these "wall warts" has grown. Add to this that they are all different sizes and the result is several wasted outlets on a power strip. The WH1 from Radio Design Labs mounts them on a single bracket where they can be spaced and secured as needed. An included six-inch power cord connects the supply to the power strip, thereby eliminating the wasted space. Each kit comes with the parts needed to mount up to six power supplies. The brackets measure 19" x 4.6" x 1.1".

800-281-2683; fax 800-289-7338; www.rdlnet.com

Circle (276) on Free Info Card

Broadcast Software International: WaveStation

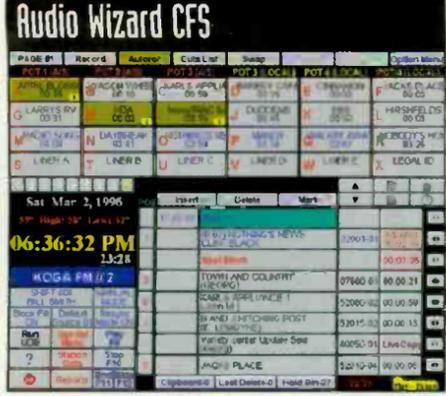


▲ WaveStation is a state-of-the-art digital audio automation software which leverages the power of the Windows environment to give you many of the advanced features of more expensive systems, and even provides the ability to run other programs and "triple overlap" for true voice tracking. The package is equipped with BSI's exclusive .WAV file labeling technology, allowing the insertion of information right into the audio file, and can run entirely automated or as a live-assist system. It easily interfaces with your satellite receiver for satellite automation and can import program log data from virtually any traffic management or music scheduling systems.

541-338-8588; fax 541-338-8656;
e-mail info@bsiusa.com;
www.bsiusa.com

Circle (281) on Free Info Card

Prophet Systems: Audio Wizard CFS



recorder that provides long-form capture of incoming audio material.

800-658-4403; fax 308-284-4181; e-mail sales@prophetsys.com;
www.prophetsys.com

Circle (278) on Free Info Card

◀ The Audio Wizard CFS is a full-featured station digital automation system. The centerpiece of the Audio Wizard CFS is its live show interface offering: drag-and-drop commercials and songs, full touchscreen compatibility, auto roll buttons, outcues, and a clipboard function among many other features. The system offers several ways to record and edit audio at any workstation, including the handy Quick Recorder and Quick Editor, and the Digital Reel-to-Reel

Shure Brothers: Broadcast mics



▲ A handheld, omnidirectional dynamic microphone with extremely low handling noise, the SM63LB is a black version of Shure's SM63L. The device features a dent-resistant Veraflex grill and a humbucking coil that virtually eliminates extraneous noise. The VP64AL is identical to the Shure VP64A, with the exception of its longer handle length. The unit is outfitted with a high-output neodymium cartridge that is protected by a water-resistant mesh grill.

800-25-SHURE; fax 847-866-2279;
e-mail sales@shure.com;
www.shure.com

Circle (280) on Free Info Card

CBSI: Digital Universe



having to deal with one clean, uncluttered screen, supporting touchscreen, mouse and keyboard operations.

800-547-3930; fax 541-271-5721; e-mail info@cbsi.com;
www.cbsi.com

Circle (279) on Free Info Card

◀ Digital Universe, new from CBSI, requires only one PC/monitor per studio thanks to its robust client/server architecture. This means not only that you can reduce hardware costs substantially, but also tailor each Digital Universe workstation with a consumer-grade audio card, perhaps, for a low demand auditioning studio, and a higher-grade card for your main air studio. Operators will appreciate

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Mix Magazine, 20th Year Anniversary Issue

"Micro Technology Unlimited was the first in the world to ship a microprocessor based Digital Audio Workstation."

Jerry Vigil, Producer, Radio and Production Magazine

"I expected the lack of a control panel to be a weakness. As it turns out, MicroSound is even capable of doing some things faster than systems with dedicated control panels. So, throw out any old notion about mice and keyboards... MicroSound makes production with a mouse surprisingly fast and rather comfortable for even the most computer shy producer.

Performing a digital fade in or fade out is as easy and fast as it gets. Setting a perfect 2 second fade can literally be done in one second, or less! Is it really this simple?

Perhaps the most unique aspect is how it treats the idea of "tracks" as we are used to thinking of them in a multitrack environment. If you want to talk in terms of tracks, MicroSound is a 512 track digital workstation. You won't run out of tracks. Next question.

After dozens and dozens of hours of use, MicroSound did not crash even once. There was not even a single error message. Bravo!

Jim Smith, Past Technical Supervisor, NPR, Washington, DC

"MicroSound is completely uncluttered and flexible. It doesn't work like a tape recorder, or some other DAW or piece of gear. It shouldn't, it should work BETTER which means that it has to be different! Its open-ended simplicity is really changing the way I think about and produce my work.

After listening to the results of purely digital playback of the same DAT on multiple machines and being astounded by the sonic differences, I've come to the conclusion that my primary storage medium for album mixes in the studio is going to be direct to MicroSound. It has become the reference. My partner, who is already working for a major label in Nashville, has commented often on how transparent the MicroSound system is."

Charles Lawson, WETA Public Radio, Arlington, VA

"MicroSound is the easiest to learn, offers the most flexibility in production, and is the most stable and consistently reliable system I have ever used. There is nothing else in its class. ... I totally amazed a new producer yesterday by creating a master spot with 11 different versions and burning an archive CD of them all in 65 minutes!"

Marty Moran Prod. Dir., WHCN-FM, Hartford, CT

"MicroSound is about total reliability. I've experienced this first hand. Our system is currently 5 years old. It has never crashed. I have never lost a sound file. Ever! The system runs 24 hours a day because it is used by the entire programming staff

Jeff Apthorp, Bible Broadcasting Network, Charlotte, NC

"I've done the best production of my career with MicroSound. My first hour saved me 32 hours of work! The screen layout, true nonlinear concept, and manual are so easy to understand that our entire staff of announcers [even 60+ year olds] was productive in just a few days."

Eddie Ciletti, EQ Magazine

"Mixing with MicroSound is the ultimate automation... The sound quality is excellent, which is to say that it is completely transparent. The average analog console, all faders down and muted, is not this quiet."

Marvin Sanders, Keyboard Magazine

"I watched MicroEditor mix 20 channels - including [sample accurate, smooth] fades and amplitude changes - without any delay at all from hitting Play to playback. This means that, even real-time, it offers at least twice the tracks of the other systems in this roundup [of 10 DAWs]."

Bill Hodges, Journalism Broadcasting Dept., Oklahoma State University, Stillwater, OK

"The MicroSound workstation we bought three years ago is still working perfectly. It is being used on a daily basis for training in a radio production class. My biggest fear when we first got the system was that students would be constantly crashing it. That just has not happened. Still to this date the system has not crashed or locked up where it could not be used."

Ruud Broers, Media Morphics, The Netherlands

"Media Morphics division of ODME is using the MicroSound hardware in our [multi-million dollar] Media Conversion Systems since 1991. The hardware is found to be extremely reliable and in use in CD mastering sites all over the world like; Japan, China, Europe and the United States.

Between 30% to 50% of the audio CDs available WORLDWIDE have been mastered on MicroSound because it is used as the ODME front end."

The logo for MicroSound, featuring the word "micro" in a lowercase sans-serif font, followed by a stylized circular icon with horizontal lines, and the word "sound" in a lowercase sans-serif font. A small trademark symbol (TM) is located to the right of the word "sound".

"Celebrating 21 years in Quality Digital Audio."

Micro Technology Unlimited

6900 Six Forks Road, Raleigh, North Carolina, USA 27619-1061

Voice: 919-870-0344 Fax: 919-870-7163 Email: info@mtu.com Web: www.mtu.com

Circle (51) on Free Info Card



VIP Products: Wrap-Ups

◀ Wire & cable markers designed to provide an inexpensive solution to the ever-present problem of fast and permanent field identification. The markers are available in widths from 1.5" to 6" to fit virtually any size cable or wire, and in eight colors to meet EIA / TIA606 standards. When applied, the clear film of the Wrap-Up completely covers and laminates the written legend, thus ensuring permanent protection against dirt, oil and water. Wrap-Ups are available for imprinting with laser printers, and custom units may be ordered to suit any need.

800-950-4921; fax 800-967-3986

Circle (282) on Free Info Card

CircuitWerkes: TeleRadio

With TeleRadio you can instantly listen to several stations in several markets simply by using your phone. TeleRadio offers: ten random memory presets; remote-controlled scanning, tuning, AM/FM band change, and memory set; automatic reset to first memory each time it answers a call; and a remote control aux audio input allows the coupler section to temporarily be used as an audio patch for remote talkback.

352-335-6555; fax 352-380-0230;

e-mail info@circuitwerkes.com; www.circuitwerkes.com

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See why Norsat is making waves with its new low cost PLL LNB.

Norsat introduces the next wave in LNBs. Norsat's new low cost series of C and Ku-band PLL LNBs offers superior phase noise performance combined with reduced costs making this new line of LNBs ideally suited for many digital audio and data applications. They are available in a wide selection of C and Ku-band frequencies for installation around the world and L.O. stability options range from ± 75 kHz to ± 150 kHz.

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Neutrik USA: Website

◀ Neutrik has updated its website to include expanded authorized distributor and new product pages, along with a new page dedicated to the trade shows Neutrik USA attends, including booth numbers when available. The new product page includes the latest products and their descriptions. The updated page now includes the new SCDF and SCDM D series weather-resistant dust covers, the NP3TT-P bantam plug, COMBO connectors, and the AES/EBU digital audio adapters.

Neutrik's authorized distributor page includes an expanded alphabetical list of distributors with their logos and contact information.

732-901-9488; fax 732-901-9608; e-mail neutrikusa@aol.com;

www.neutrik.com

Circle (284) on Free Info Card



ENCO Systems & WireReady:

NewsDAD32

◀ NewsDAD32 integrates features from ENCO's DADpro32 digital audio delivery system and WireReady's NewReady32 wire capture and editing system. The unit includes all of the features and functionality of NewsReady 32, but is optimized for seamless integration of sound bites and other audio cuts as recorded and edited within DADpro32 into a news script as prepared within NewsDAD32. The final product is a news script with embedded sound bites that can be used for on-air prompting and execution at any DADpro32 workstation sharing data access on a LAN or groupwide WAN.

800-362-6797; fax 248-476-5712; e-mail lamoray@enco.com;

www.enco.com

Circle (285) on Free Info Card

COMET North America:

Vacuum capacitors



▲ Comet offers several types of vacuum capacitors for use in transmitters, couplers and phasers. Included in the line: the MC MiniCap, a lower cost fixed vacuum capacitor; the X-Cap, a gas-filled variable capacitor designed to fill the gap between lower cost but technically limited air capacitors and higher cost, high-performance vacuum capacitors; CONDIS, a high-power compressed-gas capacitor; and the HV 100-30, used for testing and reconditioning of vacuum capacitors and other components.

203-852-1231; fax 203-838-3827

Circle (286) on Free Info Card

Pacific Research & Engineering Completes Second Sale To China National Radio

Worldwide Business Expanding

Carlsbad, CA, USA, June 23, 1998... Pacific Research & Engineering Corporation (PR&E) today announced its second sale of digital and analog on-air consoles to China National Radio, the largest operator of radio networks and stations in China.

Three more of Pacific Research & Engineering's Integrity® Digital broadcast consoles will be delivered to China National Radio's Beijing headquarters, complementing the two initial Integrity consoles purchased earlier this year. Also included are two Radiomixer consoles, marking PR&E's first sale of analog broadcast consoles specifically for use by China National Radio. The purchase was made through the Infostor Group, PR&E's Beijing distributor.

This latest acquisition by CNR brings the total number of PR&E Integrity Digital consoles in China to eight, following last month's purchase of three Integrity consoles by Beijing Radio. CNR had previously purchased two of PR&E's Integrity Digital consoles for their Beijing studios in January 1998, as well as a 20-input AirWave analog console for use at Economic Station of China HangZhou Radio in ZheJiang Province.

State-operated China National Radio is the largest provider of radio content in China. CNR's seven different networks originate over 120 hours of programming daily, which is delivered to more than 1,300 affiliate stations. "PR&E believes that there is enormous potential in the Asian marketplace in general, and in China in particular," stated Susan Dingethal, PR&E's V.P. of Sales and Marketing. "Because of recent economic difficulties, many companies have diminished their presence in Asia, but PR&E is committed to these markets. We hope that this additional purchase of PR&E products by China's largest and most distinguished broadcaster will pave the way for widespread acceptance of our products with other Chinese broadcasters."

Pacific Research & Engineering is a manufacturer of high quality broadcast studio products including on-air and production consoles, digital audio workstations, studio systems design/integration services, and custom cabinetry. U.S. Clients include NBC, ABC, CBS, Jacor Communications Inc., Capstar and Chancellor Broadcasting. Pacific Research & Engineering is located at 2070 Las Palmas Drive in Carlsbad, California, 92009, USA.

Pacific Research & Engineering Announces Partnership with IBM

Carlsbad, CA, USA, March 11, 1998... Pacific Research & Engineering Corporation (PR&E) announced today that the Company has entered into a strategic partnership agreement with International Business Machines (IBM)(NYSE:IBM). As an IBM business partner, PR&E has agreed to market the eWave™ broadcast software product family, as well as the distribution and integration of other IBM products and global services.

Most industries use integrated enterprise software specifically designed for corporations to manage their finances and operations. Prior to the Telecommunications Reform Act of 1996, the radio industry had limited need for such software due to caps on station ownership. Now, with managers overseeing dozens of stations in many locations, broadcast-specific information technology is necessary in order to effectively manage those properties. eWave is a fully integrated software solution that gives managers the all-in-one control and visibility they need.

"We're very excited about our partnership with IBM," said Susan Dingethal, V.P. of Sales and Marketing of Pacific Research & Engineering. "It's a perfect fit. PR&E is one of the most respected names in the radio industry. Together with IBM's vast resources and information technology experience, PR&E can now develop business software solutions to help broadcasters compete more effectively."

"We think that the commitment IBM has shown to the radio industry with eWave speaks volumes about the significant changes brought about by the Telecommunications Reform Act," Dingethal continued. "The business of broadcasting is now dominated by sophisticated, well-financed companies with hundreds of properties, and this rapid change has created a tremendous opportunity in the area of information management. Computers are changing the way the world works... this partnership will enable PR&E to help broadcasters change the way they work, as well."

PR&E is a Carlsbad, California-based manufacturer of high quality broadcast studio products including on-air and production consoles, digital audio workstations, studio systems design/integration services, and custom cabinetry. Clients include NBC, ABC, CBS, Jacor Communications Inc., Emmis Broadcasting, Capstar, Chancellor Broadcasting, American Radio Systems, and Cox Communications. PR&E is located at 2070 Las Palmas Drive in Carlsbad, California, 92009.

Pacific Research & Engineering Signs Letter Of Intent To Acquire Graham-Patten Systems

Carlsbad, CA, USA, May 26, 1998... Pacific Research & Engineering Corporation (PR&E) (AMEX:PXE) announced today that it has signed a Letter of Intent, subject to completion of due diligence, to acquire Graham-Patten Systems, Inc., a Grass Valley, California-based manufacturer of digital audio mixers for the video editing environment. Terms at the time of signing were not disclosed.

Jack Williams, Chief Executive Officer of PR&E, stated "Graham-Patten Systems is a recognized and highly-valued name in the audio-for-video industry. Their reputation and products are unmatched, and the combined expertise of both companies in high-performance digital audio technologies will allow us to leverage beyond our existing marketplaces."

"The television industry has been undergoing tremendous change of late," continued Williams. "PR&E's acquisition of Graham-Patten Systems positions the company optimally for the industry's conversion to Digital Television [DTV]. The relationship is also enhanced by our similar corporate cultures and values; both companies are well-respected in the marketplace for their customer-first business practices."

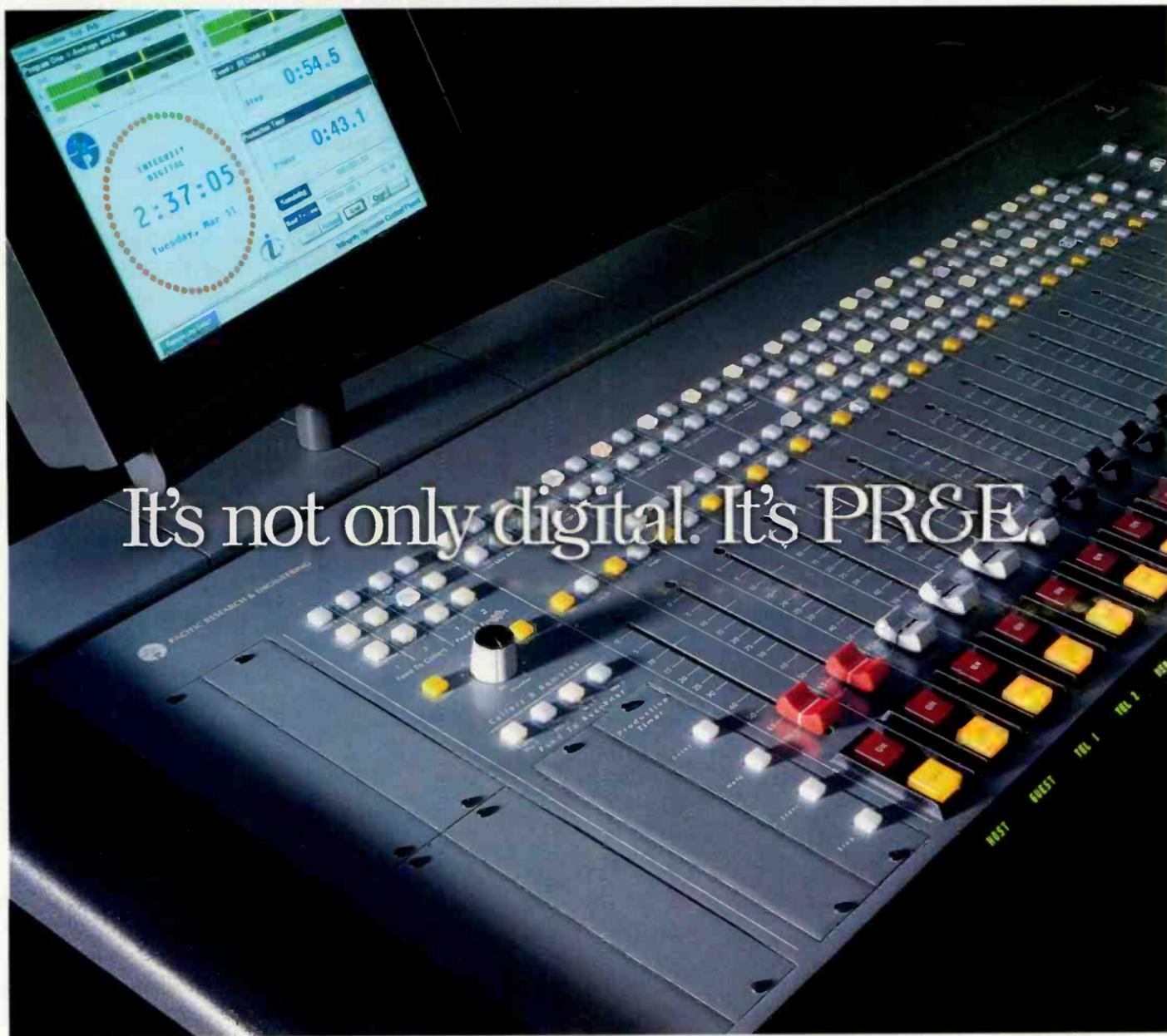
"We are extremely excited about the prospect of join-

ing forces with Pacific Research & Engineering," said Graham-Patten Systems co-founder and President, Mike Patten. "Our combined resources will allow us to better serve existing customers and put us in a unique position to leverage more than 10 years of digital audio development into new products for DTV and other expanding markets. PR&E is a recognized leader in broadcast systems, and shares with us an excellent reputation for quality, value and customer satisfaction."

Founded in 1980, Graham-Patten Systems (GPS) is the world's leading manufacturer of digital audio mixers for video editing. Innovations include production of the first professional audio mixer designed specifically for video editing, and the industry's first digital edit suite audio mixer. GPS products are employed by all major U.S. television networks, and in post production facilities worldwide. They have also been used in every Olympic Games since 1984. By working closely with their customers, Graham-Patten has invented a number of products which have since become industry standards. These include the Digital Edit Suite Audio Mixer (D/ESAM), the Digital Audio Transmission System (DATS), the Video Audio Multiplex Process (VAMP), and SoundPals digital audio building blocks.

PR&E manufactures high quality broadcast studio products and provides turnkey studio design/integration services to the worldwide broadcasting industry. Products include on-air and production mixing consoles, digital audio workstations, and studio furniture. PR&E's clients include NBC, ABC Radio, CBS Inc., Jacor Communications Inc., Chancellor Media Broadcasting, American Radio Systems, Emmis Broadcasting and Cox Communications. For more information, visit the Company's Web site at www.pre.com or call 760-438-3911.

Forward-looking statements and comments in this press release are made pursuant to the safe-harbor provisions of Section 21E of the Securities Exchange Act of 1934. Such statements relating to, among other things, the prospects for the Company to increase the level of sales and maintain profitability, are necessarily subject to risks and uncertainties, some of which are significant in scope and nature, including risks related to the demand for radio broadcasting equipment, competition and availability of capital. These risks are further discussed in the periodic reports and registration statements filed by the Company from time to time with the Securities and Exchange Commission.



It's not only digital. It's PR&E.

Now you can get digital technology and PR&E reliability in the same console. Integrity.™

It's the first digital on-air board that also speaks fluent analog. All 16 inputs can handle analog signals. Ten can also accept digital inputs at any sample rate. So you can deal with the hodge-podge of equipment in real-world studios. A unique architecture also guarantees a level of reliability other digital consoles can't match. So you can rest assured your signal will stay on the air.

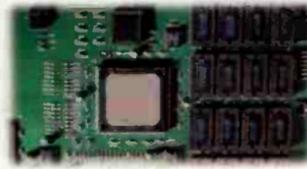
And with digital programming, you get seamless show transitions, fewer board-op errors and fewer make goods. For a brochure, call 760-438-3911, visit www.pre.com or e-mail sales@pre.com



The LCD screen and Windows® interface provide access to powerful configuration management and session-based features.



Four special-purpose buses provide automated mix-minus for telephone and remote feeds, each with IFB.



An array of state-of-the-art, floating-point digital signal processors perform mixing, routing and other functions.



The 10-character display changes when another audio source is assigned, either manually or at a preassigned time.



The FM Series

SWR's FM antennas, ranging from educational series to multi-station antenna arrays, are highly customized to meet broadcaster's needs.

Options

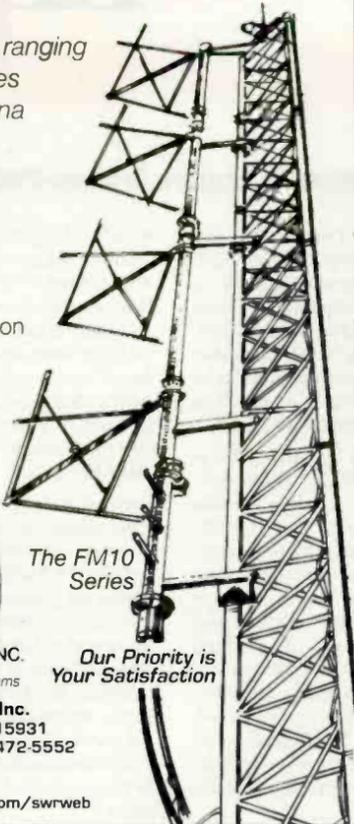
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BE Radio

EDAC: Multimedia Connector 521 Series



EDAC's 521 series of multimedia connectors is available with many different contact combinations — 28 hermaphroditic Edacon contacts along with up to six 75Ω or 50Ω contacts or six power contacts, each capable of up to 40 amps. This design allows for mixing of different types of connector requirements. It would also allow for two pairs of Edacon contacts to be used for sync, control signals, or parallel filtered power up to 16 amps.

416-754-3322; fax 416-754-3299; e-mail edac@edac.net; www.edac.net

Circle (287) on Free Info Card

This microphone processor was designed for application in the studio or on remote. Its input levels can be remotely controlled to correct levels between announcers. Once levels are correct, the equalization can easily be established with no further adjustment required. The unique compressor/expander combination reduces room and equipment noise while providing level control and increased loudness for the announcer. Other features include front panel selection of input level in four ranges, +4dB to -50dB, three section variable boost and out equalization designed for easy set-up without increasing room rumble and system hiss, and symmetry correction providing more talk power with less compression.

972-304-0455; fax 972-304-0550

Circle (288) on Free Info Card

AIRcorp: Model 500 Pro Announcer



Lambda offers this brochure highlighting the company's NES/DRP, JWS/RWS and JFS Series of DIN rail-mountable power supplies. The brochure, now available, gives complete product descriptions, features and specifications. The brochure also includes contact information for all Lambda sales and service offices worldwide, in addition to listing its nine authorized national and local distributors.

516-694-4200; fax 516-293-0519;

www.lamdapower.com

Circle (289) on Free Info Card

Spirit by Soundcraft: Folio FX8



Like the Folio FX-16, the FX-8 is a flexible, four-bus mixer capable of producing digital-quality sound for live and recording applications. It features a specially designed

16-program Lexicon effects section with dual-effect capability (including chorus and reverb, chorus and delay, and reverb and delay), as well as fully editable/storable programs and parameters.

The console itself includes eight mic/line inputs and 16 total inputs to mix, including FX returns and tape return to mix. In addition to the mix outs, two sub-busses allow groups of inputs to be sent to multitrack recorders or additional speakers, or sub-grouped to mix. All of the FX8s eight mic/line inputs are equipped with Spirit's UltraMic preamp. Providing a full 60dB of gain range and +22dBu of headroom, this preamp enables the input stage to handle virtually any mic or line device.

916-630-3960; fax 916-630-3950; www.spiritbysoundcraft.com

Circle (290) on Free Info Card

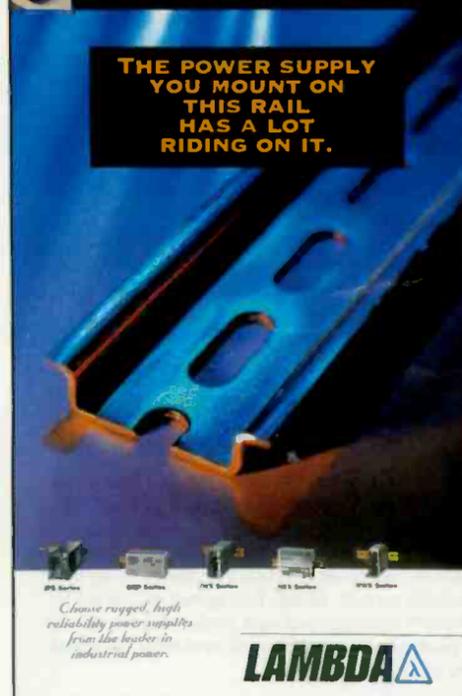
The Portable One is a true dual-domain audio tester in a portable package. The unit offers a comprehensive analog audio analyzer, a true digital domain analyzer with -140dB residual noise, independent analog and digital audio generators and analyzers, and interval save and recall of 30 test setups. The Portable One is also capable of generating and measuring interface jitter, of viewing AES/EBU status bits, and of serving as a loudspeaker monitor for digital and analog audio signals.

800-231-7350; fax 503-641-8906; www.audioprecision.com

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PRODUCT SOURCE

Lambda Electronics: Brochure



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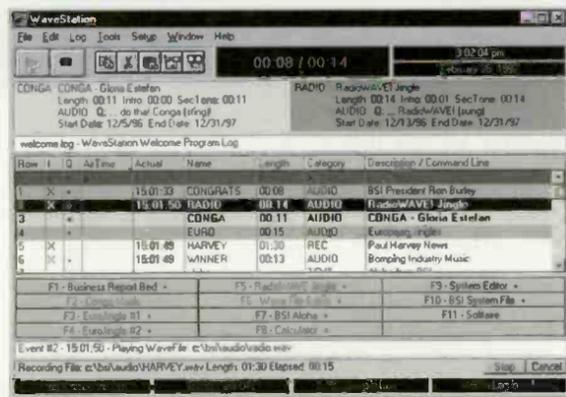
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Single, Multi, Consolidation - MITS does it all... and now it's DIGITAL!

This **Broadcast Telephone System** fits as easily into the single studio as it does into multi-studio and consolidated stations. No other multi-line system offers the expandability and flexibility of MITS: handle up to 15 telephone lines per studio; tie multiple studios together (up to 30 systems can be connected with the built in network interface); you can even combine multiple mainframes for larger systems. Each system comes with Talk Show screener software built right in.

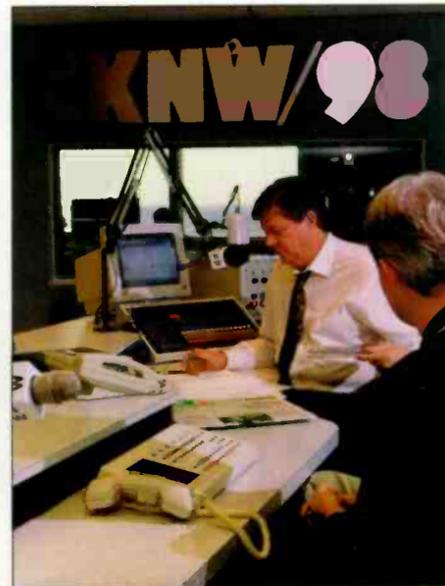


NEW! Digital Hybrid technology has been designed into the internal digital conference bridge to let you put up to six callers on air at once. Caller send (mix-minus) is automatically handled by the new DSP based Digital Hybrids.

Two sizes of work surfaces allow you to tailor MITS to fit your requirement. The **MS Work Surface** can handle up to 10 lines and 2 MS Work Surfaces are packaged together with a 10 line mainframe for as little as \$3425 (list price). The **LS Work Surface** comes with 15 line capability, in rack-mount, desk-top, or **Roadshow** configurations. The **Roadshow** gives your remote broadcast crew total control of callers just as if they were back at the studio. Whether the calls are screened on remote or in the studio the remote crew knows the caller information and status of each call, and has full control over how and when each call is processed.

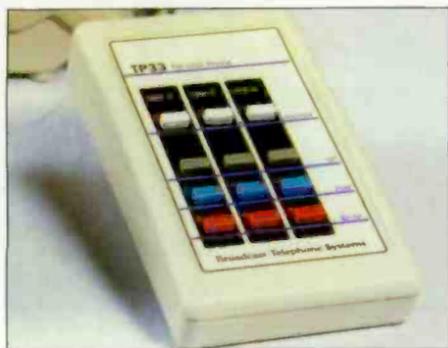
Not all studios are created equal. Our design team is always ready to provide a custom or semi-custom solution to meet your specific needs. We have the expertise to provide a system that will work for you. For more information on MITS, call 888-890-7424.

Circle (101) on Free Info Card.



TP33 Hits the Spot

With the new **TP33** any studio can have slick talkshow and contest operation. The **TP33** accepts up to three incoming phone lines and has the capability of taking all three callers to air at once using the new **DSP based Digital Hybrid technology**. Caller audio levels are maintained and adjusted by the system to provide natural sound on air and back to the caller in full duplex without objectionable 'ducking'. Other features include send and return audio level controls, 'Next'



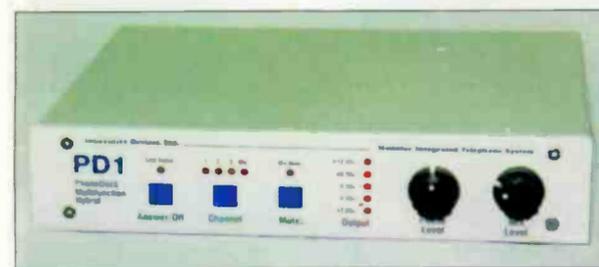
caller capability and a separate Hold Audio line input. A unique feature of the TP33 lets you use any regular single line telephone as its handset unit. You can provide your talent with any phone features they desire without being limited by your on air telephone system's capabilities.

The 4"x7" desktop control unit is connected to the main rack unit by a slim 4 conductor cable: all other connections are made to the main rack unit. For more information on the TP33 Tri-Line Phone, call 888-890-7424.

Circle (102) on Free Info Card

HOT! The PD1 Goes Digital

Now the full-featured PD1 has new **DSP based Digital Hybrid technology**. The PD1 Phone Dock is ideal for newsroom applications, but also offers capabilities for



studios, remotes, auto-coupler and other broadcast solutions. The Phone Dock includes auto answer and DTMF touch tone control of audio and relay outputs for IFB listen lines, dial-up transmitter monitoring, and other unattended operations. Get'em while they are hot at \$599. For more information on the PD1 Phone Dock, call 888-890-7424.

Circle (103) on Free Info Card

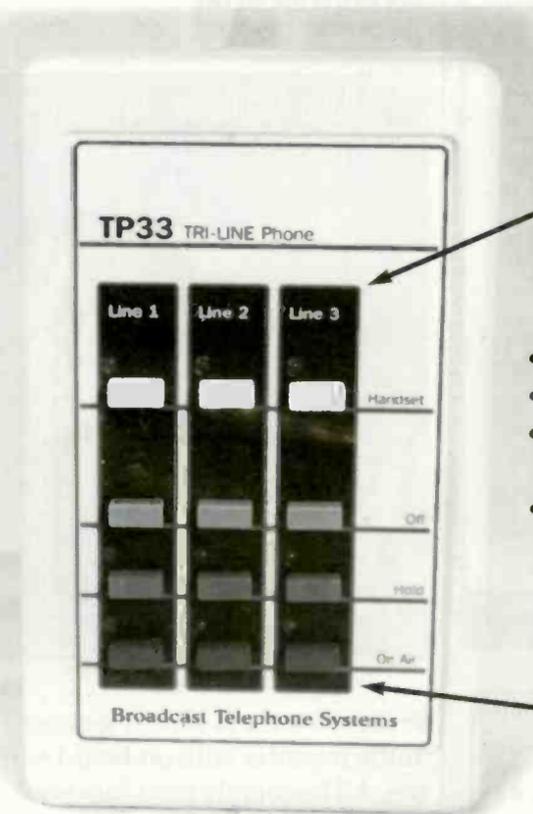
Newsroom Flash



The **PD1** is now supported by the **Burli System** comprehensive Newsroom Software. RadioStar, Burli's flagship software program, integrates newswires, audio feeds, faxes, e-mail, web access, and more, in a simple drag-and-drop editing environment. Contact Burli Software Inc. for more info at 604-738-3140.

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When the power of MITS is more than you need... Have a look at the TP33 Tri-Line Phone from Broadcast Telephone Systems



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- optional pre-fader mic. input/mix output for speakerphone and off air recording.
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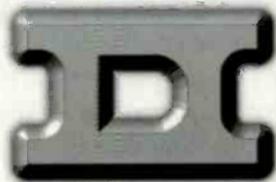
take any or all callers to air at one time.



The TP33 connectors and controls are all mounted on a 1u high rack chassis. Only a single 4 conductor cable runs to the 4" x 7" desktop control unit.

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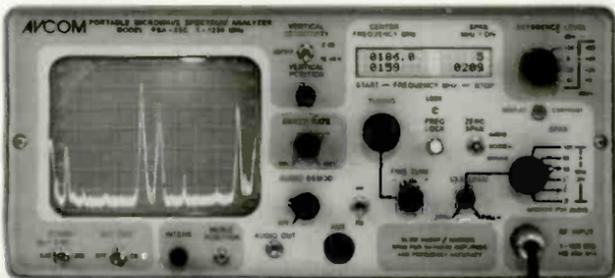
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AVCOM's newest Portable Microwave Spectrum Analyzer, model PSA-65C, incorporates a microprocessor and attractive multifunction, backlit LCD, with an expanded frequency range from less than 1MHz to over 1250MHz, for the amazing price of \$ 2930.

AVCOM's new PSA-65C is a low cost general purpose spectrum analyzer that's loaded with standard features including FM audio demodulator, AM detector and digital frequency lock. The PSA-65C covers frequencies thru 1250 MHz in one sweep with a sensitivity greater than -95 dBm at narrow spans. The PSA-65C is ideally suited for 2-way radio, cellular, cable, satellite, LAN, surveillance, educational, production and R&D work. Options include new 1250 MHz frequency extenders, BNG-1000A tracking (noise) generator, log periodic antennas, carrying case (AVSAC), and more.



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BE Radio

PRODUCT SOURCE

Space Wise: Delux radial furniture



Designed to have many style and quality feature henceforth only available in higher-priced studio furniture systems, Delux Radial is a contemporary-styled version of the standard "Delux." Radial incorporates six four-inch radial corners for a more contemporary appeal and look. In addition, there is room in the two enlarged 23"x32" base pedestals for four PC audio systems with easy access to wiring and disc drives. All Delux systems share these features: 1.5" thick top counter surfaces; raised solid oak wood trim around the top counters; added trim on vertical and bottom edges; kickboards; heavy-duty rack rail systems with easy rear access; and the versatility or modular construction for easy shipping and installation.

800-775-3660; fax 1-520-531-1078; e-mail spacewise@flash.net; www.spacewise.com

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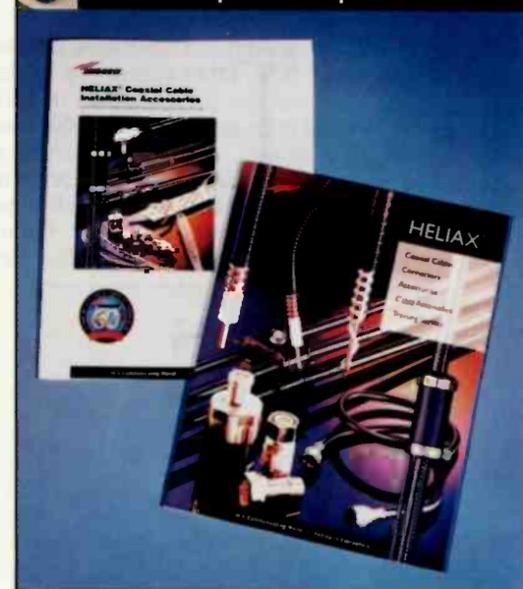
This new publication details the Heliac coaxial cable range and a complete line of cable installation accessories. The 36-page illustrated brochure describes the company's line of Heliac coaxial cables, connectors, accessories, assemblies, training and services, and contains information and detailed technical specifications for the cable range, including foam-dielectric, air-dielectric, superflexible foam-dielectric, and extraflexible coaxial cables.

708-349-3300; fax 708-349-5222;

www.andrew.com

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Andrew Corp.: Heliac products



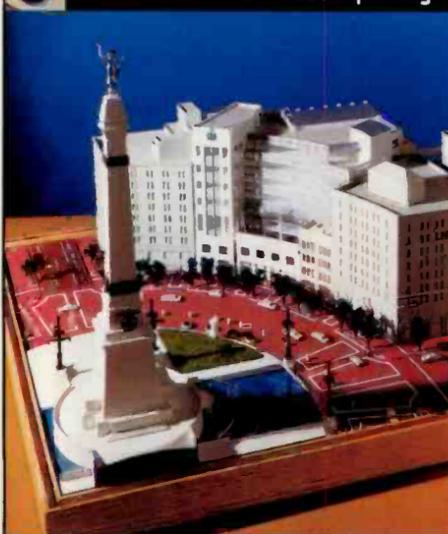
Through the years, Ratio has built a solid core of experience in many area, including ratio broadcast facilities and corporate headquarters. The firm's current projects include the world headquarters for Emmis Communications in downtown Indianapolis (pictured), Chicago radio station Q101 for Emmis, and the Radio/TV building on the campus of Indiana University.

317-633-4040; fax 317-633-4153;

mail@ratioarchitects.com; www.ratioarchitects.com

Circle (294) on Free Info Card

Ratio Architects: Facility design



Easycorder is a next-generation digital audio recorder with on-board editing facilities. All frequently used functions are within direct reach, and all settings and action performed by the user are permanently visible on a large, illuminated, liquid crystal display. Though simple in operation, the Easycorder includes several innovative capabilities. For example, Time Shift Recording, enabling the unit to start recording before the record button is actually pushed.

Internal memory, another unique feature, offers users all advantages of PC cards without the heavy cost involved. The unit's battery pack provides over four hours of operational recording time. A smart system keeps track of individual battery statistics, thus providing a precise indication of the remaining capacity.

+31 481 377740; fax +31 481 377380; e-mail sales@maycom.nl; www.maycom.nl

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Maycom: EasyCorder



Allen Osborne Associates: Mast systems

Allen Osborne Associates offers a complete line of pneumatic, hydraulic, electric or manually telescoping mast systems. In addition integrated masts with antennas and RF conductors, shelter, trailer or vehicle pneumatic and electric systems are available. Special units built to customer specifications are also available.

805-495-8420; fax 805-373-6067;

e-mail aoa@aoa-gps.com; www.aoa-gps.com

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Allen Osborne Associates offers a complete line of pneumatic, hydraulic, electric or manually telescoping masts with antennas and RF conductors, shelter, trailer or vehicle pneumatic and electric systems are available. Special units built to customer specifications are also available.



◀ Equi=Tech announces the launch of its multilingual website. The site, which allows access in English, French, German, Italian, Portuguese and Spanish, provides technical papers, product information and reviews, and technical support for countries all over the globe. Conventional power standards vary greatly from country to country, continent to continent. With minor adjustments for voltage

and frequency, Equi=Tech's balanced power technique effective at reducing background noise and enhancing the sonic quality of recordings and other audio related applications in international venues, as well as in the US. The site's URL is www.equitech.com.

541-597-4448; 541-597-4099; www.equitech.com

Circle [297] on Free Info Card



◀ This family of high-current capacitors is designed for use in demanding RF applications and are a reliable and cost-effective alternative to using mica, ceramic "door-knob," or banks of ceramic chip capacitors that can have limited current-carrying capability and tend to show considerable thermal instability. The units offer a compact design with a conservatively rated hold-off voltage of 15kV peak test. The unique design results in minimal internal inductance and features high-quality RF electrical connections that allow the capacitors to perform reliably at frequencies up to 100MHz and higher.

203-852-1231; fax 203-838-3827

Circle [298] on Free Info Card



▲ MicroSound's workstations employ the standard Windows file and drive formats rather than a proprietary format. As such, multimedia MIDI sequencers, DSP plug-ins, or other audio programs can record, play and process MicroSound .WAV files. Compatible drives include IDE, SCSI, JAZ and ZIP. Multiple users can share files over a LAN or transfer by removable media. Flexible recording allows manual start/stop, trigger to time code, or record while playing (overdub) with manual or automated punch in/out. Additionally, with the release of MicroEditor 5.2 software, full support is being added for DSP plug-in modules so third-party DSP software can access MicroEditor .WAV files.

919-870-0344;
fax 919-870-7163;
e-mail info@mtu.com;
www.mtu.com

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PICK HIT HONORABLE MENTION
Moseley: Starlink SL9003Q



◀ The latest addition to the Starlink series is the 9003Q. Quadrature amplitude modulation technology allows the SL9003Q to deliver four 16-bit linear audio channels and two data channels over narrow-bandwidth 950MHz STL channels. Features include AES/EBU I/Os, a built-in sample rate converter, plug-in MPEG audio

modules and digital multiplex for additional program, voice, FSK asynchronous and synchronous data channels. An ultra-linear four watt average transmit power out is achieved with redundant RF power modules.

805-968-9621; 805-685-9638; info@moseleysb.com;

www.moseleysb.com

Circle [299] on Free Info Card



◀ The console line includes: the bullet-proof IC/AC series with rotary pots; the new workhorse Pace-maker series; the RTV series with computer control; the mini-Mix series; and the soon-to-be-available DIAS group of digitally integrated audio systems. In addition to the consoles, Autogram now offers a complete range of accessories including the Autoclock, with time, timer and temperature; the CYA-4 emergency switcher; and the Solution 20 series of problem solvers. Many different cards are available for the Solution 20 mainframe to aid in studio construction and operation.

800-327-6901; fax 972-423-6334;
e-mail sales@autogramcorp.com;
www.autogramcorp.com

Circle [301] on Free Info Card

Frontier Design Group: Tango



◀ Tango is a 20-bit external digital audio conversion system in a 1U rackmount enclosure, providing high-resolution A/D and D/A converters and ADAT optical digital I/O. Tango has eight balanced outputs on professional 1/4" TRS jacks, and is available with zero, four, or eight balanced inputs. Upgrade kits are also available, so Tango users can easily add input modules themselves, four inputs at a time. For excellent clarity and sonic performance, Tango features 128 times oversampling delta-sigma A/D and D/A converters with 20-bit resolution. Tango's S/N ratio is >98dB, and distortion is rated at just 0.002% THD+N. Its frequency response is 20Hz to 20kHz, ±0.1dB.

603-448-6283; 603-448-6398;
e-mail info@frontierdesign.com; www.frontierdesign.com

Circle [303] on Free Info Card



▲ Switchcraft has recently released the third edition of its Molded Cable Assemblies and Patch Cord Guides. The 32-page cable catalog is a subset of the company's 350-page Engineering Design Guide and includes a variety of molded cable assemblies and patch cords.

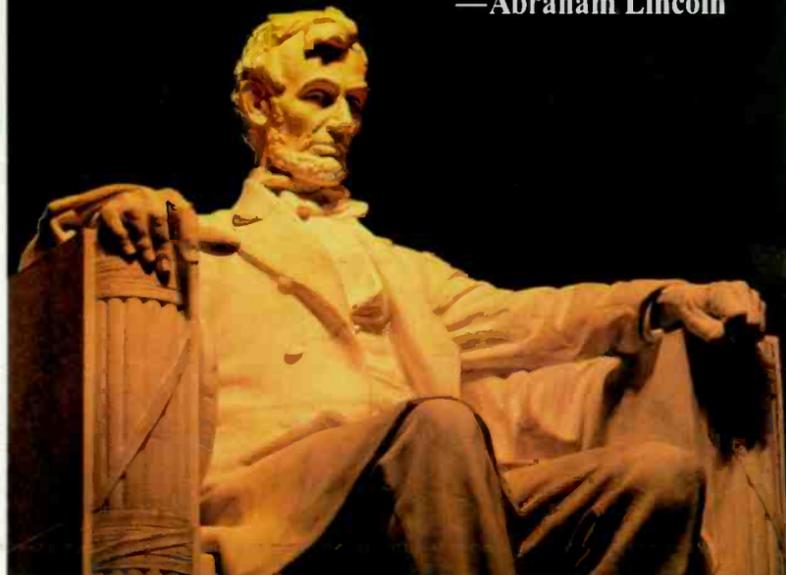
773-792-2700, ext. 243;
fax 773-792-2700;
www.switchcraft.com

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—Abraham Lincoln



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Minidisco is an Internet-based mail order retailer providing blank minidisks and accessories. By combining low overhead and high volume while keeping all catalog items in stock, all items ship within 24-hours via UPS ground, with second day and next day service available. Substantial quantity discounts are available for orders above 100 discs, and all items come with an unconditional one-year guarantee.

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e-mail sales@minidisco.com; www.minidisco.com

Circle [304] on Free Info Card

Broadcast Electronics: Audiotechnics COMET



Built upon a universal motherboard system that supports numerous module sets, the COMET series offers the superior engineering, components, and technological options to satisfy every engineer's preference. Unit allows complete creative control over a 24, 30 or 36-position mainframe. Hot-swappable modules allow for the convenience of on-air maintenance, while the VCA or thru fader level control options offer cost-effective studio solutions. Additions include gold-plated contacts, five stereo and four mono output buses, premium linear faders, solid-state switching, and easily accessible wiring for ease of maintenance.

217-224-9600;

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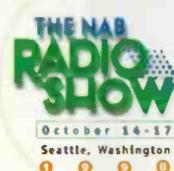
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Circle (47) on Free Info Card



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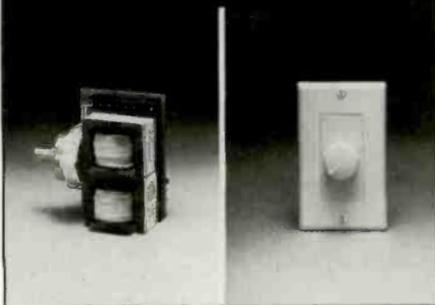
714-557-1636; fax 714-557-9788; e-mail info@mgeups.com;

www.mgeups.com

Circle (307) on Free Info Card

◀ The new Power Management Module from MGE UPS provides electrical isolation and conditioning for sensitive equipment, distributing power and offering power quality monitoring to ensure continuous broadcast operations. This advanced module supports 30 to 225kVA loads and comes with up to six panel boards supporting 42 to 252 poles for highly flexible power quality management. In the event of local circuit or equipment problems, AC-line power fluctuations or weather disturbances, the Module supports seamless switching of only the affected circuits, equipment or systems to the uninterruptible power supply bypass mode, backup power generation, or redundant backup transmission equipment if necessary. The result is highly flexible,

Russound: In-wall volume controls



Russound's Ultra-Match impedance matching system, the controls eliminate the need for a speaker selector, just calculate the total system impedance and connect two shorting bars. The SALT line has locking quick-connect terminals and can accept up to 12-gauge cable. The ALT line handles 14-gauge cable and the quick-connect terminals are pressure fit.

800-638-805; www.roussound.com

Circle (309) on Free Info Card

◀ The new lines, designated ALT and SALT, incorporate precision-wound autoformers, impedance matching, 12-step volume adjustment, 43dB of attenuation, and are rated to handle up to 126 watts. Due to their precision windings, SALT and ALT controls provide accurate sound reproduction with minimal insertion loss, low noise and low distortion. The units have frequency responses of 20Hz to 20KHz, +1, -0.5dB at their rated power. By employing

New Frontier: Surge-X Model SX-115-R/RT/RL



test circuit and additional LED indicator assure the user that the unit is functioning properly. The RT model includes a remote turn-on capability, while the RL model adds two front-panel connectors for Littlite gooseneck lamps.

215-862-9344; fax 215-862-0270

Circle (312) on Free Info Card

◀ Housed in a magnetically shielded, single-rack-space enclosure, the SX-115-R surge suppressors feature eight standard grounded-AC receptacles and improved EMI/RFI filtering circuitry. Six of these receptacles may be switched on or off by the user via an illuminating red rocker-style switch, while two remain permanently on. A power LED lights up when the units are plugged in, while a self-

RGB Spectrum: SuperView 500



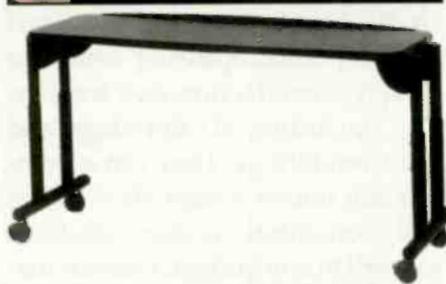
◀ The SuperView 500 is an advanced display input system that combines up to 10 computer screens on a single monitor or projector. The unit is compatible with virtually all PCs, workstations, and monitors. Input signals may be in a variety of formats, including tape recorders, DAWs and desktop computers. Each input can be panned and zoomed to emphasized areas of particular interest.

510-814-7000; fax 510-814-7026;

www.rgb.com

Circle (313) on Free Info Card

Anthro: Keyboard Cart



board unit comes with a lifetime warranty and ships out in 24 hours. More than 50 accessories are available to customize the unit, and it is available in black, bone, light gray, or wood.

503-691-2556; fax 503-691-2409; www.anthro.com

Circle (308) on Free Info Card

◀ Ideal for MIDI applications, Anthro's new cart can be used alone or with other Anthro carts. The unit measures 51" wide and 18" deep and comes with one shelf and four telescoping legs capable of adjusting the height of the shelf from 25 to 30" off the floor. The cart rolls easily on four 2³/₈" soft rubber castors. Like all Anthro carts, the key-

Radio Systems: Millenium consoles

Available in six, 12, 18 and 24 channel sizes, Millenium consoles all feature three output buses, complete remote control and metering, a comprehensive monitor section with standard eight position selector, and a clock/timer. Models differ only in their channel count and meter overbridge. (The six-channel has three meters, the 12 and 18 have five, and the 24 has seven. The 18 and 24-channel units also feature an auxiliary cutout for an extra meter or clock/timer.) All I/O audio wiring is via removable barrier strips. These connectors simplify initial installation and provide for quick future wiring changes. All parts and sub assemblies, including faders and circuit boards, are socketed or connectorized, making any necessary repair a matter of simply removing the bad part or circuit board and plugging in a new one.

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Inovonics: 520, 540, 701, PBX

Inovonics introduced four new radio products offering low-cost solutions to several different ideas. The 520 AM Modulation Monitor is a one RU unit that offers full monitoring of AM signals. The 540 FM Subcarrier Monitor/Demod can be used to measure performance of SCA, RDS/RBDS and high-speed data subcarrier signals. Fed with a composite signal from an FM modulation monitor, it can also reformat many data streams to RS-232. The 701 RDS/RBDS Mini-Encoder offers an inexpensive and easy solution for stations needing to transmit basic RDS/RBDS data streams. With so many devices having POTS line capabilities for modems or alerting, the PBX telephone switch can tie seven devices to a single telephone line, and more units can be daisy-chained for even greater flexibility.

800-733-0552; 408-458-0554;

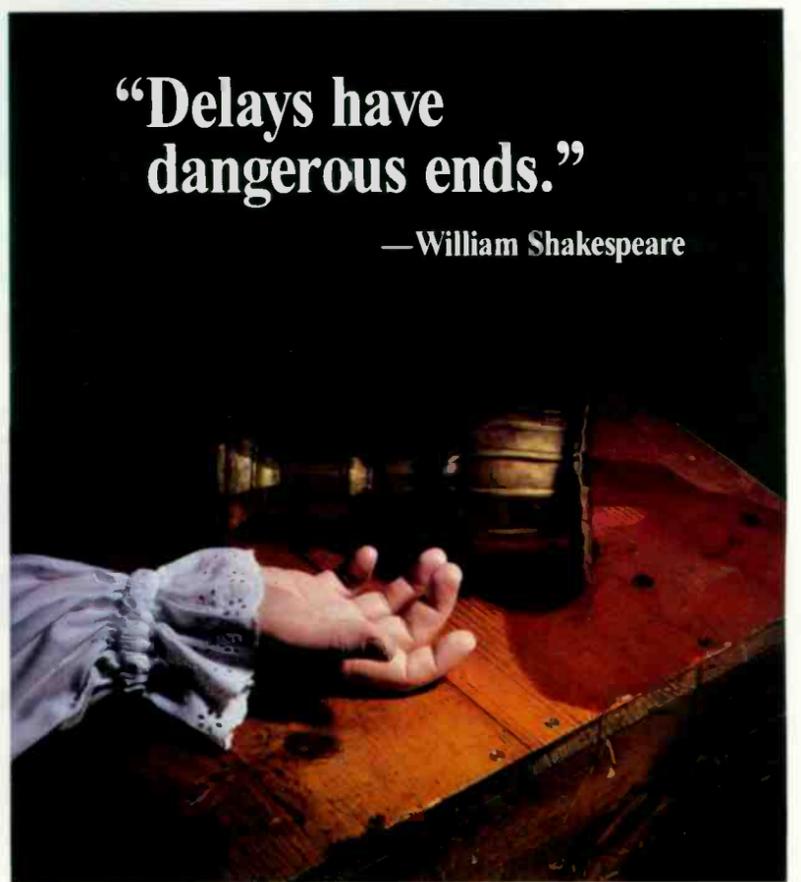
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wood interior structures, and unparalleled construction techniques and high-heat glues allow Mager Systems to offer high-quality furniture that is built to last. They are certified and accredited in solid surface materials and offer a full 10-year, no-cost replacement warranty on solid surface applications.

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◀ Mager Systems offers 18 years' experience in the construction of studio furniture for the broadcast industry, encompassing complete design, manufacture and installation, including 3D drawings and color renderings. They can accommodate one-of-a-kind showplaces and economical furniture solutions to work in any budget. Exterior materials ranging from laminates and wood to high-tech synthetic products, solid wood and engineered

Shively Labs: 2530LP

The Shively Model 2530 LP combiner module offers the low-power broadcaster superior performance in a small package. Single modules can be used to diplex two stations with frequency separations as close as .8MHz, or combined with additional modules for multi-station installations. Modules are convection cooled and can be re-tuned. The unit is designed for operation in tight quarters with a typical 1kW diplexer having a footprint of only 33" x 17".

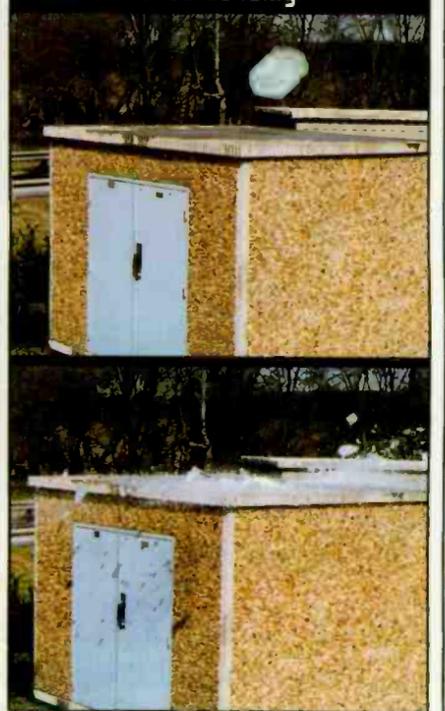
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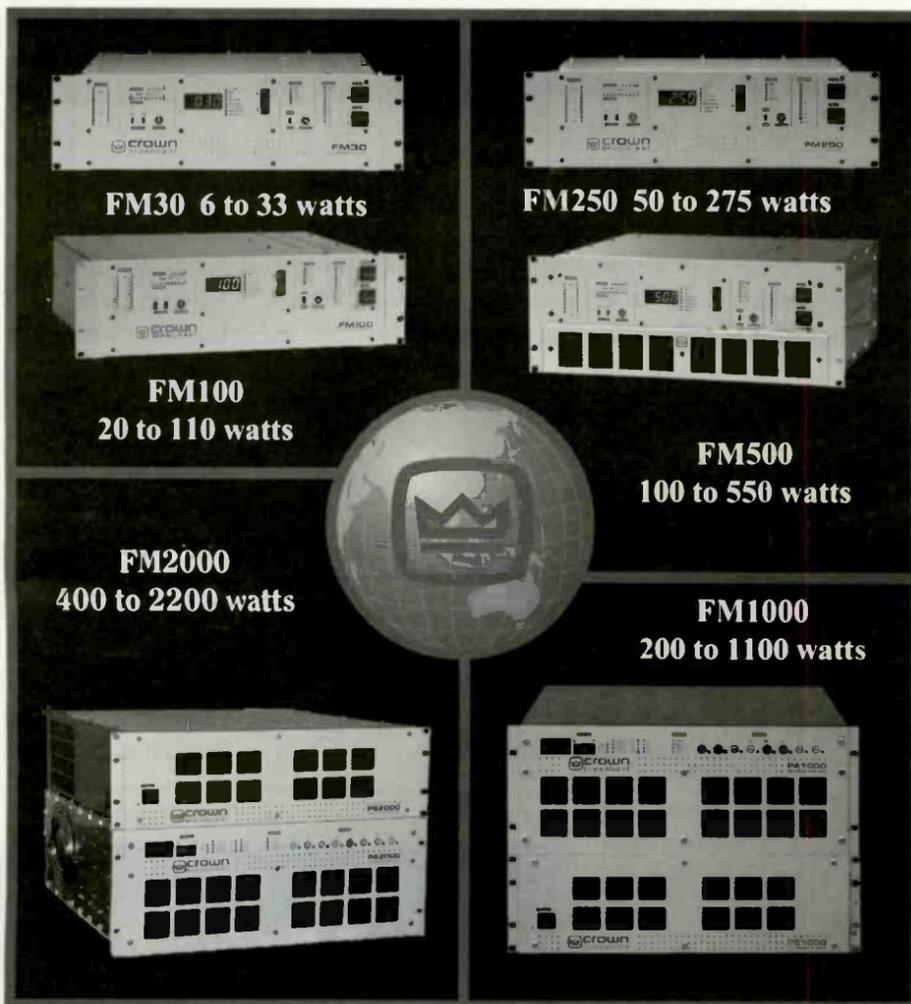
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Modeled after Crown's line of FM transmitters, these integrated exciters and power amplifiers provide reliability, efficiency and audio quality. Available in 200, 400 and 1000W power levels, these units are designed with dual redundant capability for applications

Sierra Automated Systems: SAS 160000



digital audio input signals, and the unit is compatible with the complete range of SAS remote control panels, console and rack-mounted, with full alphanumeric or push-button capability.

818-840-6749; e-mail sales@sasaudio.com; www.sasaudio.com

Circle [311] on Free Info Card

The digital audio routing switcher's 32x32 matrix is housed in a two RU chassis and provides alphanumeric controls on the front panel. A unique monitor has been provided to allow the user to listen to the AES3 or S/PDIF

Orban: Optimod-FM 8200 v. 3.0



status bits to accommodate digital STLs. Another Optimod 8200 feature included is perfect peak control (no composite clipper needed) that is preserved through 32kHz digital STLs.

510-351-3500; fax 510-351-0500; www.orban.com

Circle [313] on Free Info Card

Among the top features of version 3.0 are 21 new format specific presets, each named for a programming format (Urban/Rap, Rock, Pop, Classical, Instrumental, Jazz, News, Oldies, etc.). 3.0 retains the power-user features of the 8200, including phase rotation on/off, adjustable output balance on the five-band compressors, adjustable bass clipper threshold, and control of AES/EBU status

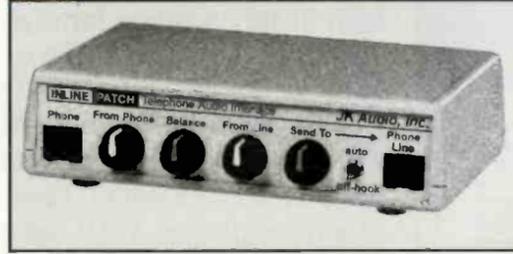
Amek: Software update for DMS

Version 2.5 presents a large portfolio of new features and modifications. Surround sound capability has been extended on to two individual buses so users can implement individual stems. Also proposed by broadcasters was the requirement of 4x clean-feed buses and a mix minus facility. The dynamic resources have been improved: the number of algorithms has been increased, and EQ and dynamics now go across all buses with insert send and return. Variable frequency low- and high-pass filters have been added to the EQ section. After significant enhancements, V. 2.5 now has a comprehensive M-S decoding facility enabling DMS to provide unlimited numbers of parallel outputs in analog or digital to be assigned to any output path.

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JK Audio: Inline Patch



from both sides. Audio input jacks let you mix sound bites or music into your conversation. One stereo output jack provides your voice on one channel and the caller's voice on the other. A second output jack contains a mix of both voices. Front panel control for each output offers all the control the user needs. All outputs offer 50Ω impedance, +10 dBm max, and variable line level output. The 1.6lb unit offers 20dB nominal separation of phone line transmit/receive audio.

815-786-2929; fax 815-786-8502; www.jkaudio.com

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The Inline Patch from JK Audio connects between the base of an analog or cordless telephone and its wall jack. It allows the user to continue to talk on the phone and get access to audio on both sides of the call. The unit contains two back-to-back hybrids for complete control of audio

Sonifex: Redbox series

The series includes: the RB-DA6 six-way stereo, 2x6-way mono, or 1x12-way mono distribution amplifier; the RB-MA2 dual-microphone amplifier; the RB-SM2 dual stereo-to-mono converter; the RB-BL2 balanced-to-unbalanced bi-directional converter; and the RB-SL2 twin mono, or stereo, limiter. The units are housed in red anodized aluminum boxes which can be screw mounted to any surface, or rackmounted for conventional wiring in a central technical area. Units can be either 115V 60Hz, or 230V 50Hz and have a front panel LED power indicator.

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fax +44 (0) 1933 650 726;
e-mail marketing@sonifex.co.uk;
www.sonifex.co.uk

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Solid Electronics Labs: DCP-1

Dynamic Composite Processor performs the functions of instantaneous limiting and composite low-pass filtering in a single structure, thereby permitting loudness, filter overshoot control, and dynamic range. Its design employs an active linear amplifier as the limiting device, and its filter structure is configured in four separate sections, each with its own overshoot compensation circuit. Front panel LED indicators are employed to allow direct indication of clipping level and overshoot compensator threshold levels. Composite signal I/O level adjustments are provided on the front panel of the unit, as well as in/out mode selection functions and a composite output signal sample port for external monitoring.

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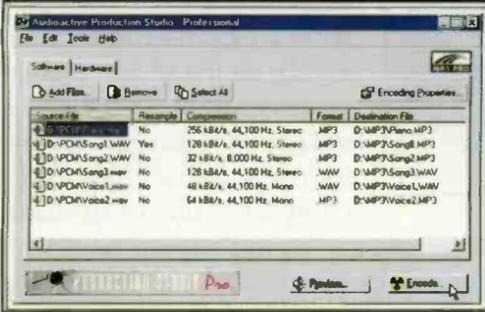
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Telos Systems: Audioactive Studio Software Encoder



Audioactive Production Studio software encoder offers a high-quality solution for digital audio compression. The resulting files are dramatically smaller. The software converts PCM files and stores them in compressed MP3 (MPEG Layer 3) and compressed .WAV audio formats. Designed for optimal audio encoding, all bit rates between 8kb/s and 256kb/s are supported. Enhanced functionality includes unlimited batch capability and high-quality encoding options for production quality audio. A demo version is available at www.audioactive.com/mp3/download.

216-241-7225; fax 216-241-4103; www.telos-systems.com

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Panasonic/Ramsa: DA7



This 32-bit, eight-bus, six-aux mixer offers 24-bit I/O capability, surround-sound mixing mode, dynamic and snapshot automation capabilities and an ergonomic console with an analog feel. The "LED Farm" provides a quick look at the routing status, automation modes, channel on/off status, EQ on/off, dynamics on/off, panning and aux send status. The built-in screen graphic display shows the current console configuration. Parametric EQ and dynamics processing is available on all inputs and aux returns.

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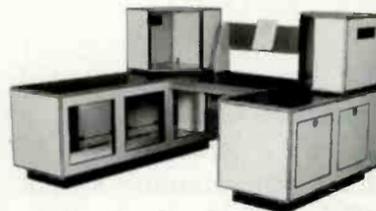
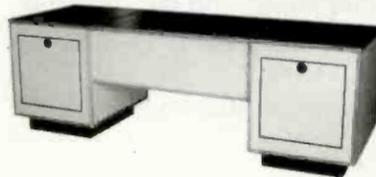
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Audio Follow: DDO - NT

The DDO-NT range of audio digital products is aimed at the needs of national broadcasters as well as local radio stations. These products have been developed under Windows NT and are subdivided in various applications such as production, broadcasting, music and advertisements scheduler, news scheduler, grids scheduler, survey module, archiving module, etc. Added to this, Audio Follow has developed some useful tools such as the Crossfade Manager, the CD Cuer, the Voice Superimposer and the Associated Data Editor.

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Cedar: Noise removal tools



The DCX declicker, CRX decrackler and DHX dehisser from Cedar offer noise removal solutions for any audio source. Particularly useful for archive recordings, each unit operates in real time with a minimum of user setup. A 24-bit AES3 I/O and 40-point floating processor is at the heart of each 1RU unit. The DCX removes up to 2500 clicks per second per channel and the DHX was recently upgraded to version 1.02 software.

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Whirlwind: PressMite

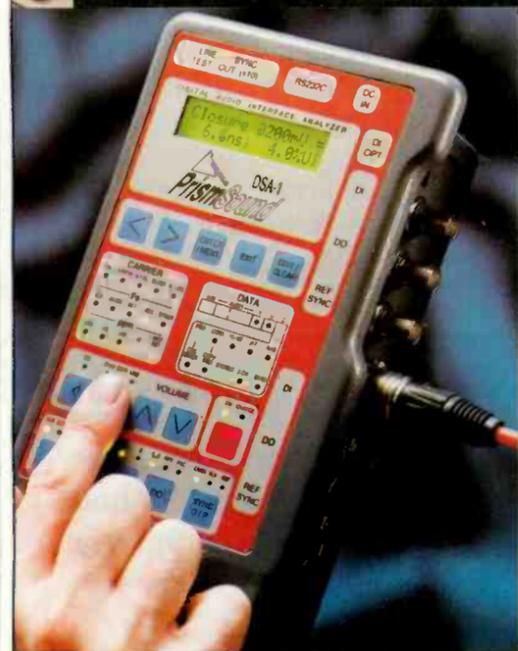


▲ A battery powered press feed system for distributing mic or line level audio with high amounts of isolation, this unit features a high-quality mic preamp, a built-in headphone amp and level control for monitoring, and active transformer-isolated outputs (12 mic and two line). The sturdy metal case can stand the most rigorous road use as well. **716-663-8820; fax 716-865-8930; e-mail sales@whirlwind.com; www.whirlwindusa.com**
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RealNetworks: RealPlayer Plus G2

The latest version of Realplayer has higher quality audio and video, a hi-fi audio display, 10-channel graphic EQ, video quality controls and the ability to scan, preset, and record streaming feeds. Users can also keep the software current with Subscriptions and AutoUpdate which automatically upgrade software to the latest version. **888-768-3248; e-mail sales@real.com; www.real.com**
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Prism Sound: DSA-1



▲ This handheld digital signal analyzer and generator has tests for jitter, bit-errors, polarity violations, carrier failure, block errors and more. It is also capable of generating various test signals for troubleshooting digital audio systems. The handheld unit is easy to transport and collected data can be downloaded and printed offline. **+44 (0) 1223 424988; fax +44 (0) 1223 425023; www.prismsound.com**
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Furman: HA-6A headphone amp



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◀ This 1RU headphone amp delivers an impressive 20W per channel with individual level controls for the master input and each output. Each output may also be used to drive small monitor speakers. Front panel LEDs also indicate the presence of an audio signal and overload conditions.



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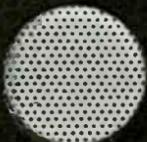
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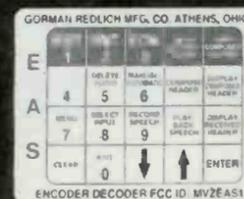
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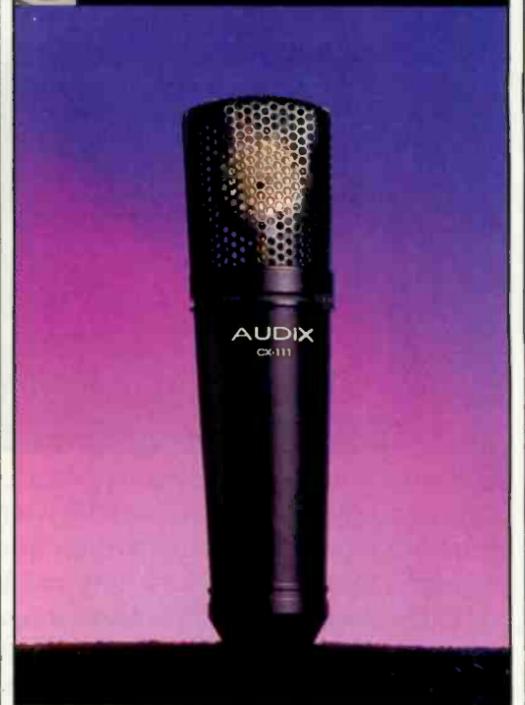
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MediaTouch: Oplog-2000

Oplog-2000 is a live assist on-air touchscreen controller for radio. Operating on Windows95/NT, the system is designed for the mission critical demands of on-air use. LAN configurations work with Windows 95, NT and Novell. It also interfaces easily with CD jukeboxes, switchers, routers and third-party digital audio players and software.

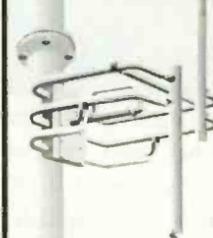
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GALLERY

Onyx: Recorder carriers



▲ Onyx manufacturers carriers for consumer MiniDisc recorders to make them more suitable for professional use and handling. The MobiDisc, PortaDisc and Carrier all work with Sony MiniDisc Walkman units and provide balanced XLR inputs and a larger battery pack for extended recording times. Other features vary by model, like a built-in monitor speaker, LED PPM recording meter and 1/4" head-phone jack.

+31 30 6373818; fax +31 30 6373818

Circle [327] on Free Info Card

Symetrix: 581E



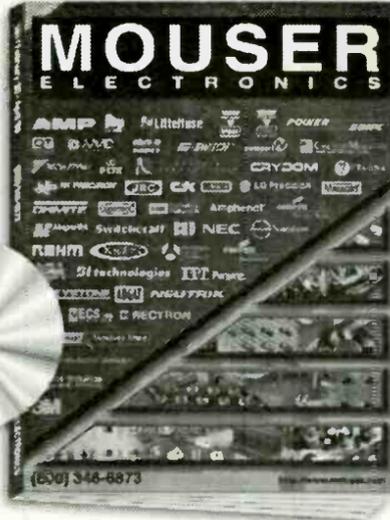
◀ This 4x4 distribution amp debuted at NAB98. With four inputs and 16 outputs, the 581E can be configured in several differing combinations with the independent one in/four out modules. Connections are made with Euroblock detachable terminals. THD+Noise is less than 0.009%, signal-to-noise ratio is >100dB and the dynamic range is over 125dB for totally transparent routing. Front trimmers adjust I/O levels, and each section has an input level LED.

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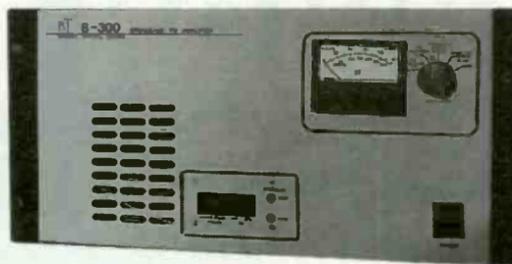
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Shown with optional Rack Mount

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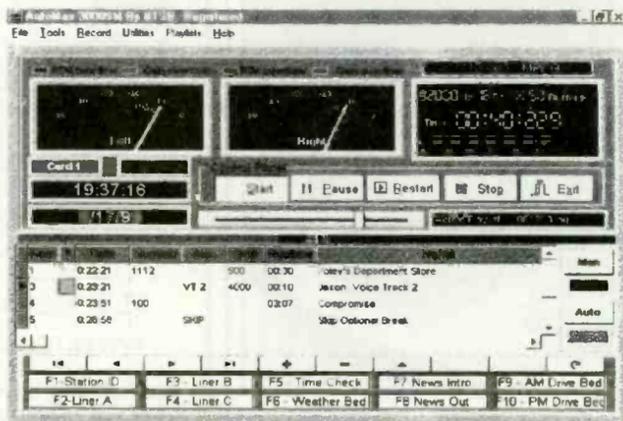
- ▶ 10 dry relay contacts out (2 are DPDT for switching bal. audio, etc.)
- ▶ Auto-answers on settable ring # and auto-disconnects with telco CPC.
- ▶ Each relay can be assigned to any tone & can be set to function as momentary, latching closure with distinct on/off codes, or interlocked latching with other relays. Any relay can be assigned to any tone(s).
- ▶ Up to 8 digit user set password prevents pirating.
- ▶ Each relay is programmable to close at beginning or end* of tone and can beep when activated. End of tone closures are after the beep!
- ▶ Two-tone & detection delay modes eliminate falsing for remotes, etc.
- ▶ 4 Status inputs beep when queried, dial 4 numbers & control relays.
- ▶ A simple, built-in audio hybrid, with active, balanced input & outputs, lets you control your equipment while monitoring local audio sources.
- ▶ All audio & control connections via easy to use screw terminals.
- ▶ Retains its settings & prior state after a power failure.
- ▶ Silencer option removes DTMF tones from output.
- ▶ List price only \$459.00. Compare our features & price to anyone else!

The DR-10 can do a lot more than space allows us to print. For complete info & downloadable manuals, check out our web site - <http://www.circuitwerkes.com/>
*end of tone closures function in momentary mode only.

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Streamlined PC Configuration Pleases Operators, Technical Staff

Automation systems that store audio at each studio workstation or demand high processing power at those locations have a hidden cost—the space and ongoing maintenance to accommodate the two, three or even four PCs per studio they demand for operation.



Thanks to its robust client/server architecture, Digital Universe, new from CBSI, requires only one PC/monitor per studio. This means that you not only can reduce hardware costs substantially, but also tailor each Digital Universe workstation based on its intended application: a non-dedicated workstation with a consumer-grade audio card, perhaps, for a low-demand auditioning studio, and all the bells and whistles for your main air studio. And operators will appreciate having to deal with only one clean, uncluttered screen that supports touchscreen, mouse and keyboard operations. Contact CBSI at 800-547-3930 to find out more.

Year 2000 Issues An Increasing Focus

Concerns over software's ability to cope with the impending Year 2000 date change have been largely focused on the business office. What about the software which drives many of your core systems, such as your live assist/automation gear? All CBSI software, including the new Digital Universe system, meets the company's Millennium Certified criteria for Y2K compatibility. Learn more by visiting the Millennium Certified page at www.cbsi.org, where you'll also find instructions for testing both stand-alone and networked PCs for correct handling of the date change.



Client/Server Architecture Offers Strong Platform

In contrast to clumsy, multi-tier networks, Digital Universe, new from CBSI, meets the demands of even the largest facilities, delivering audio to each PC in real time from a single server. This centralized server administers all audio, balancing the load from all workstations and guaranteeing maximum hard drive performance. This streamlines your hardware configuration—and costs—dramatically, and reduces the potential for on-air failures.

Current standard PC technology is at the core of Digital Universe. Built around

Visual C++, Fast Ethernet and Windows 95/Windows NT, Digital Universe's performance will improve in speed and power with each advance in any or all of these technologies. Standard approaches to such areas as backup and fault tolerance, rather than proprietary procedures, also apply to this software-based system. Call CBSI at 800-547-3930 to learn more.

Open Systems Advantage Offers Options, Growth Path

The open architecture of Digital Universe, new from CBSI, does more than just allow you to allocate workstations with different memory and speed capabilities. It also allows you to determine for yourself which audio card—and by extension which compression schemes and playback qualities—you need at each location within your station. Perhaps the sales or traffic manager's PC needs only a standard

sound card for previewing spots. In the production or air studio however, you want a more advanced card capable of handling different rates and/or compression techniques. Digital Universe doesn't depend on any one audio card, as do most other systems. This opens up a world of choices for you, and protects your investment from being locked into any one compression algorithm, proprietary board, or out-of-date platform. More details are available from CBSI at 800-547-3930.



compressed audio cannot be processed to achieve your station's unique sound.

Digital Universe, new from CBSI, gives you a choice: with capacities specified for 25 simultaneous channels of linear audio or 100+ channels of compressed audio. (And it's been stress-tested to much greater levels.) Digital Universe makes linear, uncompressed audio from your automation system a viable option at last! Contact CBSI at 800-547-3930 for more details.

Why Compress If You Don't Have To?

Most automation systems depend on compressed audio in order to deliver the real-world channel capacity today's facilities demand. But compression can seriously reduce audio quality, particularly when your audio undergoes multiple compression cycles. And, of course,

How much audio does your digital system throw away?

It's time we stopped fooling ourselves. Compression is not just a smaller and more efficient kind of audio. It's less audio.

Every time you air a compressed signal, regardless of the algorithm you use, you discard a large portion of the audio. Literally throw it away. Forever. Sooner or later, that means a serious loss of audio quality.

If you're tired of throwing away audio with your digital system, listen to Digital Universe.

Digital Universe gives you 25 simultaneous stereo signals from a single PC. Uncompressed.

That's more than four times the uncompressed channels of any other system. With every bit of the signal intact.

You'll appreciate Digital Universe's robust, client-server architecture that carries even your heaviest multi-studio load without slowdowns. Your operators will like the clean, uncluttered screens and having just one PC in each studio. And the boss will sign off on the standard Windows™ NT hardware and open systems approach.

Sound too good to be true? Call CBSI today and get the whole story.

With Digital Universe from CBSI, you don't have to sacrifice quality or capacity.

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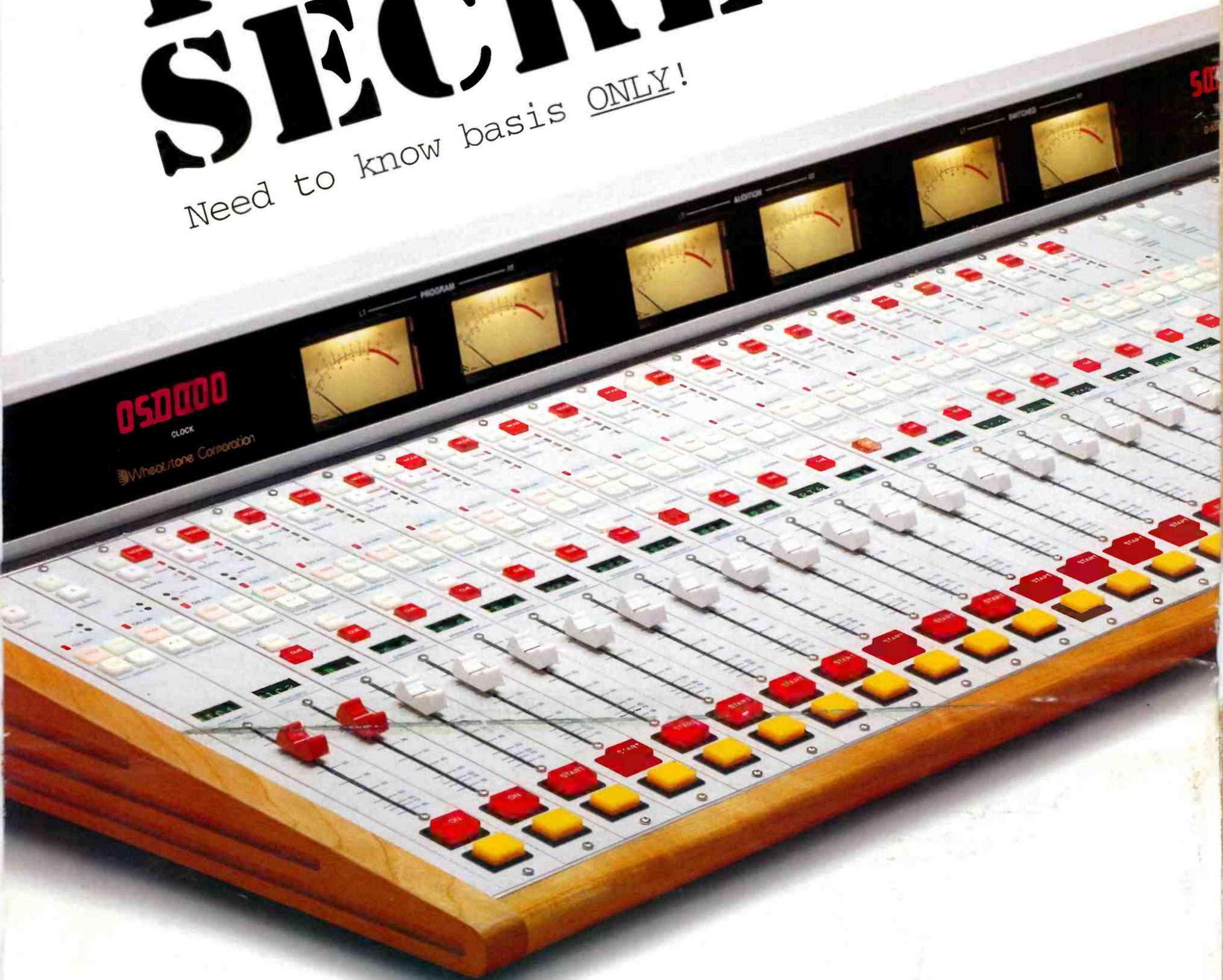
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