Tektronix products take spotlight at two major trade shows

IEEE INTERCON/73/NAB 51st ANNUAL CONVENTION

Tekweek salutes Tektronix' participation in two important trade shows—Institute of Electrical and Electronics Engineers conference in New York City and National Assosciation of Broadcasters (NAB) meeting in Washington, D.C.—both scheduled for the week of March 25.

When IEEE Intercon/73 opens Tuesday at the New York Coliseum, Tektronix will have more than 100 products on display. Products being shown for the first time include the Digital Processing Oscilloscope, the 212 miniscope, and the DM64 Telequipment storage oscilloscope.

The Digital Processing Oscilloscope, which will be introduced at a press conference in New York Monday, combines a 7704A scope (acquisition and display) with a P7001 processor and mini-computer.

Tek's booth at IEEE Intercon/73 will feature a number of innovations, primarily a large panel showing the integrated system of the 7000 series. The booth has been redecorated in two shades of Tek blue, and allows 80 linear feet for display.

Tek's participation in the NAB show in the nation's capitol takes on major proportions this year with a large, walk-in display area featuring Tek television products. The booth will be in a prominent position at the entrance to the exhibit hall in the Sheraton-Park Hotel, and products will be displayed by application group.

Tek will introduce eight new television products at NAB. They are the 670 17-inch color picture monitor, 650 matrix monitor, 145 PAL signal generator, 1440 automatic video corrector, 1441 VIR signal deleter inserter, 1478 calibrated chrominance corrector, and 147A and 149A NTSC signal generators.

In this special section, *Tekweek* in cooperation with the Advertising department under Earl Music spotlights a few of the many products Tektronix will feature at these two shows.

Introducing . . .

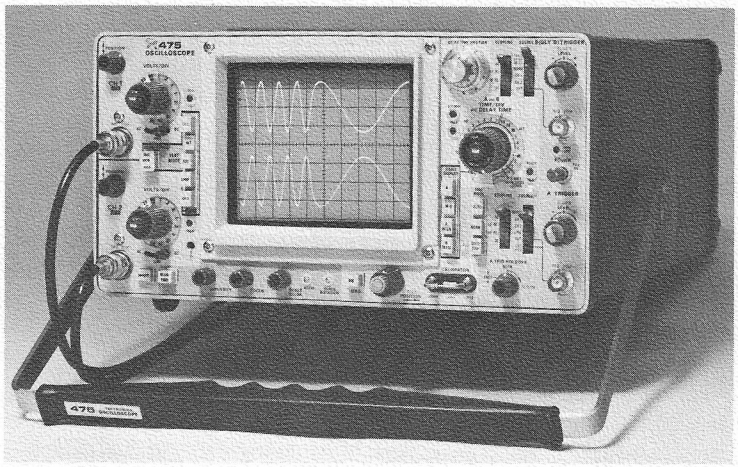
Digital processing oscilloscope makes bow at New York show

The Tektronix Digital Processing Oscilloscope combines the capabilities of a high-performance laboratory oscilloscope with the computing power and data processing capabilities of a modern mini-computer.

The instrument consists of a Type 7004A Oscilloscope to which is added a P7001 Processor unit and a mini-computer. The P7001 contains a computer I/O interface unit, a D/A converter, an A/D converter, and has a 4-K core memory storage. The P7001 permits an operator to digitize any waveform viewed on the CRT and store it in one of four core memory arrays as well as recall stored waveforms. Digitized waveforms may also be sent to the mini-computer for processing. Processed waveforms are returned to the P9001 memory. Thirteen push buttons on the P7001 provide instant call of prestored waveform processing routines.

The 7704A Oscilloscope accepts more than 25 Type 7000 series plug-in units which provide unmatched signal acquisition capabilities. Signals ranging from micro volts to kilo volts over times from picoseconds to seconds are accessible. Using conventional plug-ins, bandwidths as wide as DC—175 MHz are available. In addition, spectrum analyzer, time domain reflectometer, sampling (bandpass to 14 GHz) digital counter and digital multimeter plug-ins are available.

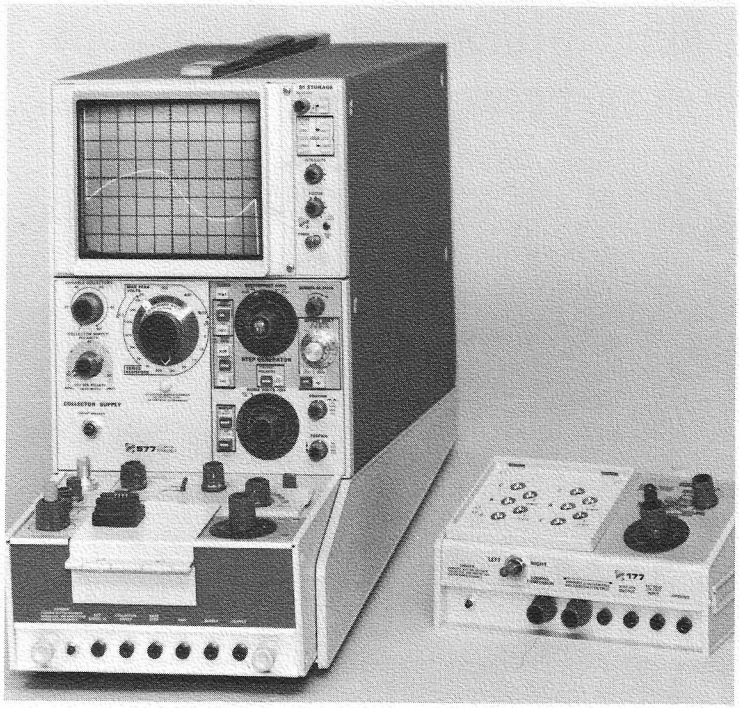
The mini-computer using Tektronix-developed APD BASIC software can process waveform data with capabilities ranging from addition and subtraction of two waveforms to super-sophisticated FFT convolution and many other routines. If the waveform can be seen on the CRT, it can be stored and processed. The variety of measurements possible is limited only by the programmer's imagination.



465/475 PORTABLE OSCILLOSCOPES

The 465 and 475, small 25-lb. portable oscilloscopes, represent significant price performance breakthroughs rather than simply another evolution in portable 'scope development. The 475's Gain-Bandwidth-Price combination of 200 MHz at 2mV/cm results in an outstanding price performance package. The 465 has 100 MHz bandwidth at 5 mV/div and also represents an outstanding price performance buy.

The 465 and 475 achieve full bandwidth at their highest sensitivity settings. They contain a big, bright 8 cm by 10 cm display. Sweep speeds of 1 ns/div in the 475 and 5 ns/div in the 465 permit detailed wave shape analysis. Many new convenience features such as Trig View, operation function push buttons, probe ground reference button, battery operation and others add value to these price performance leaders.

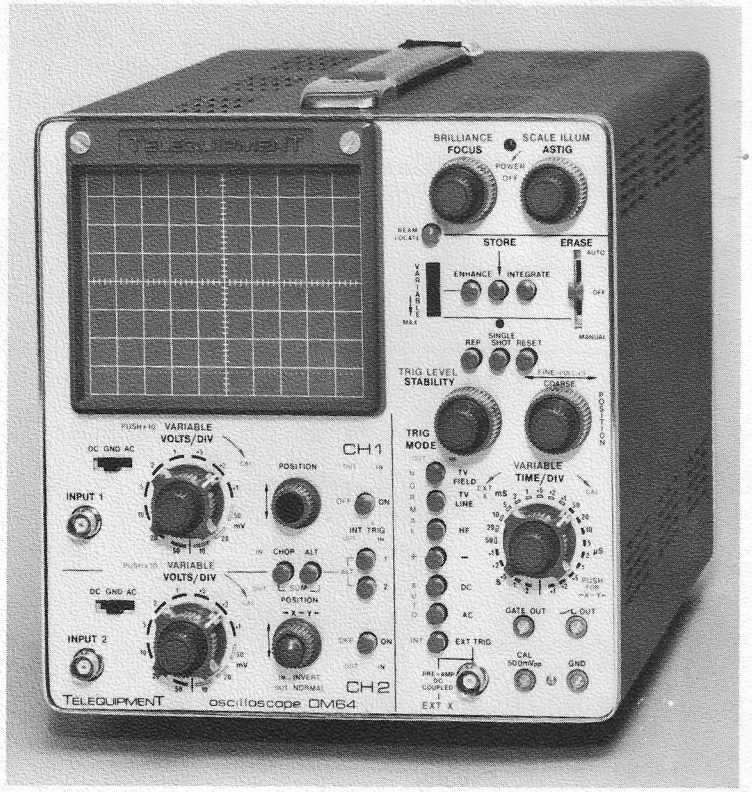


577 CURVE TRACER

The Tektronix 577 Curve Tracer is a measurement system for linear ICs, transistors and other components. For the first time, a single system provides all of the following:

1. Displays parameters of linear ICs such as op-amps, dual op-amps, comparators, differential amplifiers, sense amplifiers, IC regulators, etc.
2. Displays parameters of transistors, FETs, tunnel diodes, SCRs, zener diodes, etc.
3. Uses modular design and construction approach to allow for future expansion.
4. Plots and displays IC characteristics for a whole range of operating conditions, not just single points.
5. Provides storage display.
6. Operates like a curve tracer.
7. The 577 System is as inexpensive as a curve tracer.

The advantages of a curve tracer for incoming inspection or production line use are now available for IC testing as well as transistors. IC users will be able to find if a device meets specifications, and even what its characteristics look like. Professors and instructors may conveniently display device characteristics to assist lecture and lab presentations. Circuit designers will now be able to economically display random noise, popcorn noise, thermal feedback effects and phase shift effects of op-amps. Line regulation, load regulation and input current tests of voltage regulators are now easier to make. All of this is possible with the new 577 Curve Tracer Measurement System.



TELEQUIPMENT

A low-cost storage oscilloscope joins the Telequipment line. This 10-MHz bistable storage oscilloscope (DM64) is dual-trace and features compactness and light weight.

The DM64 combines the features of a conventional oscilloscope with the added capabilities of a proven bistable storage design. Yet it is priced $800 to $1000 lower than other storage oscilloscopes on today's market. Through front panel controls, the storage writing speed of the DM64 can be varied from 25 cm/ms to 250 cm/ms.

Storage oscilloscopes enable the user to make meaningful evaluations of slowly changing phenomena that would appear only as a slowly-moving dot on a conventional oscilloscope. Changing "one-shot" events, whose image would flash across the conventional oscilloscope screen too fast to be seen without elaborate camera equipment, can easily be viewed using only the DM64.

A storage oscilloscope has the ability to store a CRT display for later observation. This stored display may be quickly erased to make way for storage of a later event. The instrument is converted to a normal display oscilloscope by a single control.

A wide range of sweep speeds from 2 s/cm to 100 ns/cm (40 ns/cm with X5 magnifier), X-Y measurement capability, and 5% accuracy make the DM64 ideal for general instrument use. Deflection factors extend to 1 mV/cm at full bandwidth.

212 PORTABLE OSCILLOSCOPE

Tektronix introduces the 212, a completely new dual trace, 500 kHz, 3 x 5¼ x 9 inch 'scope that weighs just 3.4 pounds. It is double insulated, permitting safer high-voltage measurements, and built of impact-resistant plastics for application in severe environments. Integral one-megohm probes store in specially designed compartments when not in use. These probes are color-coded with the vertical deflection controls to minimize measurement error. Trigger controls are simplified to one rotary control. Up to 5 hours operation are provided from rechargeable internal batteries.

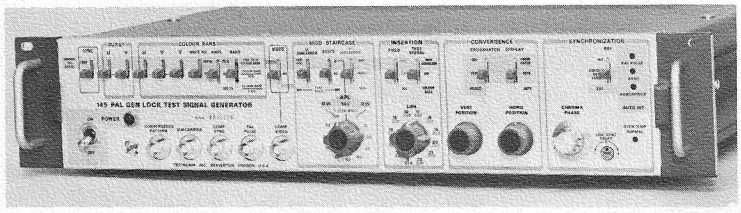
17-INCH 670 COLOR PICTURE MONITOR

The 670 Color Picture Monitor features the 17-inch Sony Trinitron (Registered Trademark Sony Corporation). In contrast to the complex shadow mask tube, requiring 20 or more front-panel adjustments, the 670 has just four. Those four front-panel controls are fully capable of handling the needs of the professional to achieve a "standard" color picture which he can secure by locking a protective door to assure no diddling.

The Trinitron has been successful in the home receiver market for several years. The picture tube we are using employs the same simplified arrangement of three beams, and just one gun. The three beams; red, green and blue, are on the same horizontal plane, making convergence a simple matter of modulating the horizontal deflection of red and blue beams.

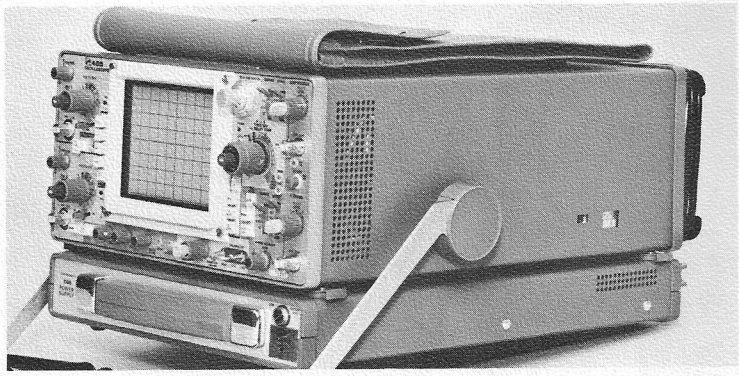
All Tektronix NTSC Color Monitors now incorporate an additional, and unique, matrix which allows viewing program material with essentially the same chrominance characteristics as a modern home receiver. The correction matrix may be switched out with a front-panel control to allow test and setup with a strict NTSC demodulation characteristic. Picture quality should be judged on the monitors with the matrix operating. It is disabled only for test with standard color-bar signals.

Display phosphors in common use today, including those in the Tektronix 650 and 670 Monitors, differ in chromaticity from those which were used as the basis for the NTSC standards. These changes have been made to secure advantages in brightness, producibility and hue stability. Nearly all home receivers have compensated for the resulting shifts in hue and saturation and can be adjusted to produce a picture very much in accord with the NTSC standards. To date, professional studio monitors and color-bar generators have maintained the original NTSC coding and matrixing. This has resulted in chrominance errors in the display which are due to the difference between the NTSC taking primaries and the present display primaries. Video operators either vary monitor controls to produce more pleasing and plausible pictures or, in some cases, alter the composition of the video signal to achieve desirable picture quality on their monitor. This practice in effect cancels out the phosphor chromability corrective matrix designed into the home receivers and consequently the home viewer sees a different and inferior picture at home.



145 PAL GEN-LOCK TEST SIGNAL GENERATOR

The 145 PAL Gen-Lock Test Signal Generator provides sync and timing pulses and test signals for 625-line 50-hertz field standards. The 145 operates as either a master or gen-locked sync pulse generator. Two gen-locking rates are provided, slow and fast. Three operating modes provide full-field color bars, staircase and convergence test signals plus insertion test signals.



1106 BATTERY PACK

The 1106 battery pack, pictured here connected to the 475 option 7 portable oscilloscope, provides compact battery and DC power capability. It supplies 24 V DC with 140 watthour capability and is designed to connect to the feet of the 465 or 475. This power source may be used to power the option 7 version of the 465 or 475 Tektronix portable 'scope to provide battery power in a single package or to be operated separately in two packages of almost equal weight, each with its own handle. The built-in battery charger permits charging while the 'scope is being used elsewhere.

Tektronix TV products given prominent spot at NAB show

by Art Andersen
Advertising

Tektronix is no longer a back-of-the-show exhibitor at the National Association of Broadcasters show. This year we're at the main entrance with a fresh new 900 square foot exhibit.

A major concept in the exhibit is the use of the rack-mount environment normal to broadcasting. In addition, the customer *comes into* our booth rather than through it. Once inside our 30' x 30' booth he can view all products displayed by the application group. For example, VIRSatility products, where the new 1440 VIRS Inserter/Deleter are showing the benefits of signal improvement.

Our activity in VIRS products represents a new position for Tektronix. Our past position in television has been one of a supplier of high grade television test and measuring products. Today we are also "in-line" with products such as the 1440 Automatic Video Corrector, actually removing program signal distortions with the aid of the VIRS. VIRS stands for Vertical Interval Reference Signal, a new signal developed to aid the broadcaster maintain the quality of his signal. With the VIRS used to its full potential, the home viewer will rarely see green men unless it's intentional—like the jolly green giant.

Another application area is VITS (Vertical Interval Test Signal) where we will show the benefits of the new 147A and 149A Test Signal Generators and the chroma/luminance gain ratio correcting abilities of the new 1478.

We will show our new 17-inch color monitor, the 670, in several booth locations along with the improved 650, the 12-inch measurement quality monitor that was used extensively in the Munich Olympic broadcasts.

The 145 Gen-Lock Test Signal Generator for PAL systems (used in many parts of the world) will be on display in our multi-national section, along with improved vectorscopes for PAL and PAL M. A portion of the exhibit is devoted to CATV, an area where the number of our products are in demand because of higher technical standards now required by law. Spectrum Analysis, TDR, TV scopes and the J16 are set up to show how the broadcaster and cable operator both can benefit from Tektronix products.

In preparation for NAB, 12 US and Canadian television field engineers participated in a television products marketing meeting here March 5-9, conducted by Steve Kerman, Television Product manager. A major portion of their schedule was devoted to the new products in the applications demonstrations in the NAB booth. Supporting literature, including the 76-page 1973 Television Products catalog, was presented to the group along with other advertising activities related to TV, such as news releases, new television literature and marketing sales releases. All US television and CATV customers will receive 1973 television catalogs before the show opens.

Television Products field engineers, sometimes known as "Video Rangers," include: Marcel Kay, Dennis Chamberlin, Joe Gayer, Tom Milton, Jack Benton, Dave Comstock, Jim Sandberg, Bob Mahoney, Bud Rees, Duncan Doane and Austin Basso.