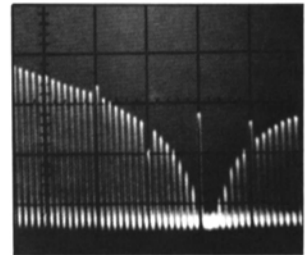


# Highlights

- 526 Exploring and Exploiting Subchannels in the NTSC Spectrum** • *M. A. Isnardi* • When the NTSC spectrum is analyzed in three dimensions, regions of high spatiotemporal frequencies that have several important properties can be identified. First, these regions contain little energy for scenes of normal picture content. Second, they contain frequencies, such as those corresponding to moving diagonals, that are largely ignored by the human visual system. Third, they are not interpreted as normal color by most NTSC receivers. These properties allow the insertion of additional, possibly uncorrelated, video information into prefiltered "holes" or "subchannels" in the multidimensional spectrum.



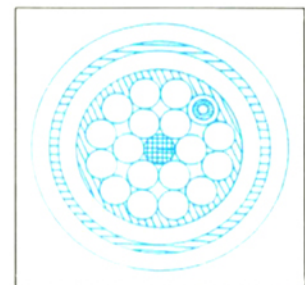
- 533 Interchange Tests for the D-1 Digital Format** • *B. Eiberger* • In the television studio, videotape recorders serve as key elements of program production. The standardization process of the D-1 format is an example of worldwide agreement on a standard prior to implementation of the necessary equipment. A reference recording acceptable to all manufacturers is required which allows for differences in the implementation of equipment. Tape interchange between various hardware manufacturers is a must. This article discusses some of the procedures used and practical results achieved during the standardization process, with special attention given to recording and playback as well as recommendations for future considerations.



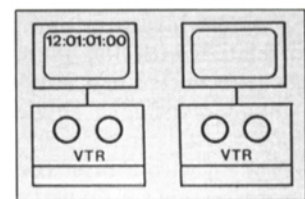
- 538 Super-Sensitive HDTV Camera Tube with the Newly Developed HARP Target** • *M. Kurashige, N. Egami, K. Tanioka, and K. Shidara* • Conventional HDTV cameras lack sensitivity, so the iris must be opened two to three stops wider compared with practical cameras working within existing TV standards. This narrows the depth of focus, sacrificing picture quality. A more sensitive HDTV camera tube that combines a new high-gain avalanche rushing amorphous photoconductor (HARP) target and 2/3-in. high-performance magnetic-focus electrostatic-deflection (MS) electron optics is proposed.



- 546 Fiber Optics and Video: A Background** • *G. F. Benton* • The television industry has been slower to use fiber optics as a replacement for wire-based transmission systems than have the telephone companies. By 1984, fiber optics was into its third generation in the telecommunications markets. Its declining cost, coupled with its lower weight, smaller size, noise immunity, and longer repeaterless transmission, have allowed fiber optics to compete against traditional copper-wire and microwave transmission methods on a cost/performance basis. The continuing improvements of optical transmission components, along with developments in digital video signal processing, present an opportunity for the television industry to reexamine the use of fiber optics.



- 556 The ESBUS: Its Use Within the BBC** • *M. M. Gleave* • Through its involvement with the European Broadcasting Union (EBU) and its relationship with SMPTE, the British Broadcasting Corp. (BBC) has taken an active role in the development of the EBU-SMPTE serial remote control standard, the ESBUS. To gain practical experience of this important standard, the BBC has implemented a remote control system using the ESBUS which gives studios control over a centrally located group of VTRs. This system has now been operating for over 18 months.



- 560 The Shape of Screens to Come** • *R. A. Strain* • The advent of compatible high-definition television (HDTV) will require specially prepared software to accommodate various image formats because excessive cropping and anamorphic distortion are an inevitable result of displaying programs in formats different from their intended design. An analysis of problem areas in film and video which suffer from excessive cropping is provided and related to the development of HDTV. The solutions offered also pertain to the development of a consumer widescreen television system, fully compatible with NTSC, which can serve as a testbed for the wide format of HDTV.

