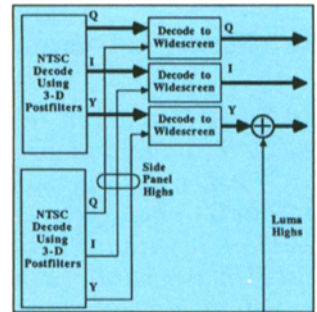
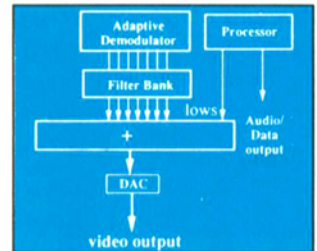


# Highlights

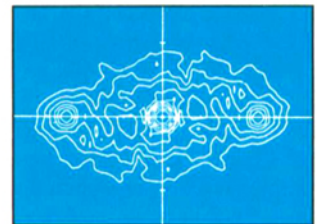
- 484** **Advanced Compatible Television: A Progress Report** • *M. A. Isnardi, C. B. Dieterich, and T. R. Smith* • Advanced compatible television (ACTV) is an evolutionary system that can be introduced in a single 6-MHz channel. The introductory system (ACTV-I) can be augmented with a second 6-MHz channel (to become ACTV-II) when spectrum is available. The ACTV broadcast signal is compatible with the existing NTSC broadcast service. NTSC receivers will display a normal aspect ratio, NTSC-quality picture. ACTV reviewers will display a wide aspect ratio image with improved horizontal and vertical resolution. ACTV-II offers full HDTV performance that can be implemented when bright high-definition displays are available at consumer prices and when additional spectrum is available.



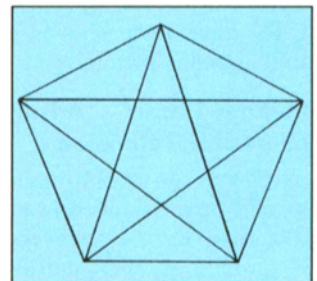
- 496** **Reliable EDTV/HDTV Transmission in Low-Quality Analog Channels** • *W. F. Schreiber and A. B. Lippman* • The presence of random noise, interference, echoes, and imperfect frequency response in terrestrial broadcasting channels, and of pervasive low-level reflections in cable systems, degrades the quality of most television reception. These effects tend to reduce the difference between the quality of NTSC and that of various advanced television systems, as actually delivered to the home via such channels. In this article, several methods are presented to deal with these effects, and thus to preserve the improved quality made possible by currently proposed EDTV and HDTV systems.



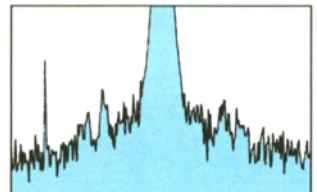
- 504** **A Modular Digital Video Coding Architecture for Present and Advanced TV Systems** • *S. Sabri, D. Lemay, and E. Dubois* • The evolution from composite television systems to component and advanced systems presents a major challenge for the transmission and distribution of different signal formats with varying quality and performance requirements. In this article, a modular video coding architecture for digital transmission of current NTSC and component signals (CCIR Rec. 601) is presented. The evolution of this architecture to handle advanced TV systems such as HDTV is discussed.



- 512** **Real-Time Digital Compositing in Anti-Aliased Text and Graphics Generation** • *D. Chernyshov, G. Morrel, and G. Faison* • Character generation has reached the level where full-color images have become necessary to compete in the market. The advantages of full-color, frame-buffer architecture for character generation over traditional stroke-maker architecture are numerous but the disadvantages of slower screen rewrites and slow, new-character compositing have discouraged most manufacturers. Utilizing a digital-compositing arithmetic and logic unit (ALU), the compositing circuit has been implemented into an application-specific integrated circuit (ASIC) chip set that enabled the integration of a compositor into two new anti-aliased text generators.



- 515** **Recording at High Volumetric Packing Densities** • *I. Wolf and T. Neuman* • Small-format digital recording requires increased media volumetric packing density (MVPD). This article presents the recording performance of an experimental metal evaporated tape (MET), for which MVPD in excess of 1 Tbit/in.<sup>3</sup> was achieved on currently available recording systems. At this density, 4.3 hr of D-2 recording can be stored in 1 in.<sup>3</sup> of this tape, compared with 20 min for an equal volume of D-2 tape at D-2 densities.



- 520** **Friction — Its Influence in Rotary Magnetic Tape Recorders** • *H. L. Zahn* • The density of information recorded on magnetic tape has increased remarkably within the last decade. Smaller tracks and shorter recorded wavelength have made it possible to use smaller tapes or to convert to digital recording. In further development the limits will be set not least by mechanical issues, that is, friction. The phenomena of friction are to a large extent related to the molecular resonance frequency of the materials in contact.

